ATGACTGCCGCCATAAGAAGACAGAGAGAACTGAGTATCCTCCCAAAGGTGAATTTCAAT

TTTTGTTATTATGAGTGTGCTTGCTTATATAAAAGAATATGCTTAAGGGAAAAAAGGTGC

TTTAAAGTTAATATTCTACAAACCATAGTTTATGAGCATAAGAAATTACATAATTTACAG

CAATCTGATGTATTAGTAATAATAATGTATTATTATCTCTTAAACAGTGTTTTGTTTTAT

GGCTAACAGTAGCACCTGTGAATGAGGCAGAACCTGTTATTTGGATTTCACAAGGATGTG

AAAGTAATGGTACTGTTAAAAGTACCAAAAATGTATTATATGCTTTAAAAATTCTAGCCA

GAAAACAGTATTTTCCTTTTCAACACATCTATTGAAAGTGTTGGATAAATGCAGGATGTT

AATATGCTATAAACATAAAGTCTGTTTTTAAAAAATAGCATTTGAAAATCATGAAGGGCT

TTTTGTTTTCTTTTGTTTGTATATATGTTTATTGGTAAAAGGTGACACTGGAAGCAATGA
MetAsn

ACACCACAGTGATGCAAGGCTTCAACAGATCTGAGCGGTGCCCCAGAGACACTCGGATAG
ThrThrValMetGlnGlyPheAsnArgSerGluArgCysProArgAspThrArgIleVal

TACAGCTGGTATTCCCAGCCCTCTACACAGTGGTTTTCTTGACCGGCATCCTGCTGAATA
GlnLeuValPheProAlaLeuTyrThrValValPheLeuThrGlyIleLeuLeuAsnThr

CTTTGGCTCTGTGGGTGTTTGTTCACATCCCCAGCTCCTCCACCTTCATCATCTACCTCA
LeuAlaLeuTrpValPheValHisIleProSerSerSerThrPheIleIleTyrLeuLys

AAAACACTTTGGTGGCCGACTTGATAATGACACTCATGCTTCCTTTCAAAATCCTCTCTG
AsnThrLeuValAlaAspLeuIleMetThrLeuMetLeuProPheLysIleLeuSerAsp

ACTCACACCTGGCACCCTGGCAGCTCAGAGCTTTTGTGTGTCGTTTTTCTTCGGTGATAT
SerHisLeuAlaProTrpGlnLeuArgAlaPheValCysArgPheSerSerValIlePhe

TTTATGAGACCATGTATGTGGGCATCGTGCTGTTAGGGCTCATAGCCTTTGACAGATTCC
TyrGluThrMetTyrValGlyIleValLeuLeuGlyLeuIleAlaPheAspArgPheLeu

TCAAGATCATCAGACCTTTGAGAAATATTTTTCTAAAAAAACCTGTTTTTGCAAAAACGG
LysIleIleArgProLeuArgAsnIlePheLeuLysLysProValPheAlaLysThrVal

TCTCAATCTTCATCTGGTTCTTTTTGTTCTTCATCTCCCTGCCAAATATGATCTTGAGCA
SerIlePheIleTrpPhePheLeuPhePheIleSerLeuProAsnMetIleLeuSerAsn

ACAAGGAAGCAACACCATCGTCTGTGAAAAAGTGTGCTTCCTTAAAGGGGCCTCTGGGGC
LysGluAlaThrProSerSerValLysLysCysAlaSerLeuLysGlyProLeuGlyLeu

TGAAATGGCATCAAATGGTAAATAACATATGCCAGTTTATTTTCTGGACTGTTTTTATCC
LysTrpHisGlnMetValAsnAsnIleCysGlnPheIlePheTrpThrValPheIleLeu

TAATGCTTGTGTTTTATGTGGTTATTGCAAAAAAAGTATATGATTCTTATAGAAAGTCCA
MetLeuValPheTyrValValIleAlaLysLysValTyrAspSerTyrArgLysSerLys

AAAGTAAGGACAGAAAAAACAACAAAAAGCTGGAAGGCAAAGTATTTGTTGTCGTGGCTG
SerLysAspArgLysAsnAsnLysLysLeuGluGlyLysValPheValValValAlaVal

Fig. 1

TCTTCTTTGTGTGTTTTGCTCCATTTCATTTTGCCAGAGTTCCATATACTCACAGTCAAA
PhePheValCysPheAlaProPheHisPheAlaArgValProTyrThrHisSerGlnThr

CCAACAATAAGACTGACTGTAGACTGCAAAATCAACTGTTTATTGCTAAAGAAACAACTC
AsnAsnLysThrAspCysArgLeuGlnAsnGlnLeuPheIleAlaLysGluThrThrLeu

TCTTTTTGGCAGCAACTAACATTTGTATGGATCCCTTAATATACATATTCTTATGTAAAA
PheLeuAlaAlaThrAsnIleCysMetAspProLeuIleTyrIlePheLeuCysLysLys

AATTCACAGAAAAGCTACCATGTATGCAAGGGAGAAAGACCACAGCATCAAGCCAAGAAA
PheThrGluLysLeuProCysMetGlnGlyArgLysThrThrAlaSerSerGlnGluAsn

ATCATAGCAGTCAGACAGACAACATAACCTTAGGCTGACAACTGTACATAGGGTTAACTT
HisSerSerGlnThrAspAsnIleThrLeuGly

CTATTTATTGATGAGACTTCCGTAGATAATGTGGAAATCAAATTTAACCAAGAAAAAAAG

ATTGGAACAAATGCTCTCTTACATTTTATTATCCTCGTGTACAGAAAAGATTATATAAAA

TTTAAATCCACATAGATCTATTCATAAGCTGAATGAACCATTACTAAGAGAATGCAACAG

GATACAAATGGCCACTAGAGGTCATTATTTCTTTCTTTCTTTATTCAGCGGCCGCTTTTT

TTTTTTTTTTTT

Fig. 1
(Continued)

```
GCGACTATTTCCCCCAAAGAGACAAGCACACATGTAGGAATGACAAAGGCTTGCGAAGGA

GAGAGCGCAGCCCGCGGCCCGGAGAGATCCCCTCGATAATGGATTACTAAATGGGATACA

CGCTGTACCAGTTCGCTCCGAGCCCCGGCCGCCTGTCCGTCGATGCACCGAAAAGGGTGA

AGTAGAGAAATAAAGTCTCCCCGCTGAACTACTATGAGGTCAGAAGCCTTGCTGCTATAT
                                        MetArgSerGluAlaLeuLeuLeuTyr

TTCACACTGCTACACTTTGCTGGGGCTGGTTTCCCAGAAGATTCTGAGCCAATCAGTATT
PheThrLeuLeuHisPheAlaGlyAlaGlyPheProGluAspSerGluProIleSerIle

TCGCATGGCAACTATACAAAACAGTATCCGGTGTTTGTGGGCCACAAGCCAGGACGGAAC
SerHisGlyAsnTyrThrLysGlnTyrProValPheValGlyHisLysProGlyArgAsn

ACCACACAGAGGCACAGGCTGGACATCCAGATGATTATGATCATGAACGGAACCCTCTAC
ThrThrGlnArgHisArgLeuAspIleGlnMetIleMetIleMetAsnGlyThrLeuTyr

ATTGCTGCTAGGGACCATATTTATACTGTTGATATAGACACATCACACACGGAAGAAATT
IleAlaAlaArgAspHisIleTyrThrValAspIleAspThrSerHisThrGluGluIle

TATTGTAGCAAAAAACTGACATGGAAATCTAGACAGGCCGATGTAGACACATGCAGAATG
TyrCysSerLysLysLeuThrTrpLysSerArgGlnAlaAspValAspThrCysArgMet

AAGGGAAAACATAAGGATGAGTGCCACAACTTTATTAAAGTTCTTCTAAAGAAAAACGAT
LysGlyLysHisLysAspGluCysHisAsnPheIleLysValLeuLeuLysLysAsnAsp

GATGCATTGTTTGTCTGTGGAACTAATGCCTTCAACCCTTCCTGCAGAAACTATAAGATG
AspAlaLeuPheValCysGlyThrAsnAlaPheAsnProSerCysArgAsnTyrLysMet

GATACATTGGAACCATTCGGGGATGAATTCAGCGGAATGGCCAGATGCCCATATGATGCC
AspThrLeuGluProPheGlyAspGluPheSerGlyMetAlaArgCysProTyrAspAla

AAACATGCCAACGTTGCACTGTTTGCAGATGGAAAACTATACTCAGCCACAGTGACTGAC
LysHisAlaAsnValAlaLeuPheAlaAspGlyLysLeuTyrSerAlaThrValThrAsp

TTCCTTGCCATTGACGCAGTCATTTACCGGAGTCTTGGAGAAAGCCCTACCCTGCGGACC
PheLeuAlaIleAspAlaValIleTyrArgSerLeuGlyGluSerProThrLeuArgThr

GTCAAGCACGATTCAAAATGGTTGAAAGAACCATACTTTGTTCAAGCCGTGGATTACGGA
ValLysHisAspSerLysTrpLeuLysGluProTyrPheValGlnAlaValAspTyrGly

GATTATATCTACTTCTTCTTCAGGGAAATAGCAGTGGAGTATAACACCATGGGAAAGGTA
AspTyrIleTyrPhePhePheArgGluIleAlaValGluTyrAsnThrMetGlyLysVal

GTTTTCCCAAGAGTGGCTCAGGTTTGTAAGAATGATATGGGAGGATCTCAAAGAGTCCTG
ValPheProArgValAlaGlnValCysLysAsnAspMetGlyGlySerGlnArgValLeu

GAGAAACAGTGGACGTCGTTCCTGAAGGCGCGCTTGAACTGCTCAGTTCCTGGAGACTCT
GluLysGlnTrpThrSerPheLeuLysAlaArgLeuAsnCysSerValProGlyAspSer

CATTTTTATTTCAACATTCTCCAGGCAGTTACAGATGTGATTCGTATCAACGGGCGTGAT
HisPheTyrPheAsnIleLeuGlnAlaValThrAspValIleArgIleAsnGlyArgAsp
```

Fig. 2

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GTTGTCCTGGCAACGTTTTCTACACCTTATAACAGCATCCCTGGGTCTGCAGTCTGTGCC
ValValLeuAlaThrPheSerThrProTyrAsnSerIleProGlySerAlaValCysAla

TATGACATGCTTGACATTGCCAGTGTTTTTACTGGGAGATTCAAGGAACAGAAGTCTCCT
TyrAspMetLeuAspIleAlaSerValPheThrGlyArgPheLysGluGlnLysSerPro

GATTCCACCTGGACACCAGTTCCTGATGAACGAGTTCCTAAGCCCAGGCCAGGTTGCTGT
AspSerThrTrpThrProValProAspGluArgValProLysProArgProGlyCysCys

GCTGGCTCATCCTCCTTAGAAAGATATGCAACCTCCAATGAGTTCCCTGATGATACCCTG
AlaGlySerSerSerLeuGluArgTyrAlaThrSerAsnGluPheProAspAspThrLeu

AACTTCATCAAGACGCACCCGCTCATGGATGAGGCAGTGCCCTCCATCTTCAACAGGCCA
AsnPheIleLysThrHisProLeuMetAspGluAlaValProSerIlePheAsnArgPro

TGGTTCCTGAGAACAATGGTCAGATACCGCCTTACCAAAATTGCAGTGGACACAGCTGCT
TrpPheLeuArgThrMetValArgTyrArgLeuThrLysIleAlaValAspThrAlaAla

GGGCCATATCAGAATCACACTGTGGTTTTTCTGGGATCAGAGAAGGGAATCATCTTGAAG
GlyProTyrGlnAsnHisThrValValPheLeuGlySerGluLysGlyIleIleLeuLys

TTTTTGGCCAGAATAGGAAATAGTGGTTTTCTAAATGACAGCCTTTTCCTGGAGGAGATG
PheLeuAlaArgIleGlyAsnSerGlyPheLeuAsnAspSerLeuPheLeuGluGluMet

AGTGTTTACAACTCTGAAAAATGCAGCTATGATGGAGTCGAAGACAAAAGGATCATGGGC
SerValTyrAsnSerGluLysCysSerTyrAspGlyValGluAspLysArgIleMetGly

ATGCAGCTGGACAGAGCAAGCAGCTCTCTGTATGTTGCGTTCTCTACCTGTGTGATAAAG
MetGlnLeuAspArgAlaSerSerSerLeuTyrValAlaPheSerThrCysValIleLys

GTTCCCCTTGGCCGGTGTGAACGACATGGGAAGTGTAAAAAAACCTGTATTGCCTCCAGA
ValProLeuGlyArgCysGluArgHisGlyLysCysLysLysThrCysIleAlaSerArg

GACCCATATTGTGGATGGATAAAGGAAGGTGGTGCCTGCAGCCATTTATCACCCAACAGC
AspProTyrCysGlyTrpIleLysGluGlyGlyAlaCysSerHisLeuSerProAsnSer

AGACTGACTTTTGAGCAGGACATAGAGCGTGGCAATACAGATGGTCTGGGGGACTGTCAC
ArgLeuThrPheGluGlnAspIleGluArgGlyAsnThrAspGlyLeuGlyAspCysHis

AATTCCTTTGTGGCACTGAATGGGCATTCCAGTTCCCTCTTGCCCAGCACAACCACATCA
AsnSerPheValAlaLeuAsnGlyHisSerSerSerLeuLeuProSerThrThrThrSer

GATTCGACGGCTCAAGAGGGGTATGAGTCTAGGGGAGGAATGCTGGACTGGAAGCATCTG
AspSerThrAlaGlnGluGlyTyrGluSerArgGlyGlyMetLeuAspTrpLysHisLeu

CTTGACTCACCTGACAGCACAGACCCTTTGGGGGCAGTGTCTTCCCATAATCACCAAGAC
LeuAspSerProAspSerThrAspProLeuGlyAlaValSerSerHisAsnHisGlnAsp

AAGAAGGGAGTGATTCGGGAAAGTTACCTCAAAGGCCACGACCAGCTGGTTCCCGTCACC
LysLysGlyValIleArgGluSerTyrLeuLysGlyHisAspGlnLeuValProValThr

CTCTTGGCCATTGCAGTCATCCTGGCTTTCGTCATGGGGGCCGTCTTCTCGGGCATCACC
LeuLeuAlaIleAlaValIleLeuAlaPheValMetGlyAlaValPheSerGlyIleThr
```

Fig. 2
(Continued)

GTCTACTGCGTCTGTGATCATCGGCGCAAAGACGTGGCTGTGGTGCAGCGCAAGGAGAAG
ValTyrCysValCysAspHisArgArgLysAspValAlaValValGlnArgLysGluLys

GAGCTCACCCACTCGCGCCGGGGCTCCATGAGCAGCGTCACCAAGCTCAGCGGCCTCTTT
GluLeuThrHisSerArgArgGlySerMetSerSerValThrLysLeuSerGlyLeuPhe

GGGGACACTCAATCCAAAGACCCAAAGCCGGAGGCCATCCTCACGCCACTCATGCACAAC
GlyAspThrGlnSerLysAspProLysProGluAlaIleLeuThrProLeuMetHisAsn

GGCAAGCTCGCCACTCCCGGCAACACGGCCAAGATGCTCATTAAAGCAGACCAGCACCAC
GlyLysLeuAlaThrProGlyAsnThrAlaLysMetLeuIleLysAlaAspGlnHisHis

CTGGACCTGACGGCCCTCCCCACCCCAGAGTCAACCCCAACGCTGCAGCAGAAGCGGGAA
LeuAspLeuThrAlaLeuProThrProGluSerThrProThrLeuGlnGlnLysArgGlu

CCCAGCCGCGGCACCCGCGAGTGGGAGAGGAACCAGAACCTCATCAATGCCTGCACAAAG
ProSerArgGlyThrArgGluTrpGluArgAsnGlnAsnLeuIleAsnAlaCysThrLys

GACATGCCCCCCATGGGCTCCCCTGTGATTCCCACGGACCTGCCCCTGCGGGCCTCCCCC
AspMetProProMetGlySerProValIleProThrAspLeuProLeuArgAlaSerPro

AGCCACATCCCCAGCGTGGTGGTCCTGCCCATCACGCAGCAGGGCTACCAGCATGAGTAC
SerHisIleProSerValValValLeuProIleThrGlnGlnGlyTyrGlnHisGluTyr

GTGGACCAGCCCAAAATGAGCGAGGTGGCCCAGATGGCGCTGGAGGACCAGGCCGCCACA
ValAspGlnProLysMetSerGluValAlaGlnMetAlaLeuGluAspGlnAlaAlaThr

CTGGAGTATAAGACCATCAAGGAACATCTCAGCAGCAAGAGTCCCAACCATGGGGTGAAC
LeuGluTyrLysThrIleLysGluHisLeuSerSerLysSerProAsnHisGlyValAsn

CTTGTGGAGAACCTGGACAGCCTGCCCCCCAAAGTTCCACAGCGGGAGGCCTCCCTGGGT
LeuValGluAsnLeuAspSerLeuProProLysValProGlnArgGluAlaSerLeuGly

CCCCCGGGAGCCTCCCTGTCTCAGACCGGTCTAAGCAAGCGGCTGGAAATGCACCACTCC
ProProGlyAlaSerLeuSerGlnThrGlyLeuSerLysArgLeuGluMetHisHisSer

TCTTCCTACGGGGTTGACTATAAGAGGAGCTACCCCACGAACTCGCTCACGAGAAGCCAC
SerSerTyrGlyValAspTyrLysArgSerTyrProThrAsnSerLeuThrArgSerHis

CTGACCACCTACTCTCATCAGAAGCAACACTAACCCCGACAATTCANCTCTGACTTCAAA
LeuThrThrTyrSerHisGlnLysGlnHis

GGGACCAGAGCTTTGGCAGGGGAGACAACCCGCCGCCCGCCCCGCAGAGGGTGGACTCCA

TCCAGGTGCACAGCTCCCAGCCATCTGGCCAGGCCGTGACTGTCTCGAGGCAGCCCAGCC

TCAACGCCTACAACTCACTGACAAGGTCGGGGCTGAAGCGTACGCCCTCGCTAAAGCCGG

ACGTACCCCCCAAACCATCCTTTGCTCCCCTTTCCACATCCATGAAGCCCAATGATGCGT

GTACATAATCCCAGGGGGAGGGGGTCAGGTGTCGAACCAGCAGGCAAGGCGAGGTGTCCG

CTCAGCTCAGCAAGGTTCTCAACTGCCTCGAGTACCCACCAAACCAAAAAGGCCTGCGGC

AGAACCGAGGGACGCTGGGTCCTCCTCTCTGGGACACAGGGGTACTCACGAAAACTGGGC

CGCGTGGTTTGGTGAAAG

Fig. 2
(Continued)

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GCGACTATTTCCCCCAAAGAGACAAGCACACATGTAGGAATGACAAAGGCTTGCGAAGGA

GAGAGCGCAGCCCGCGGCCCGGAGAGATCCCCTCGATAATGGATTACTAAATGGGATACA

CGCTGTACCAGTTCGCTCCGAGCCCCGGCCGCCTGTCCGTCGATGCACCGAAAAGGGTGA

AGTAGAGAAATAAAGTCTCCCCGCTGAACTACTATGAGGTCAGAAGCCTTGCTGCTATAT
                                                MetArgSerGluAlaLeuLeuLeuTyr

TTCACACTGCTACACTTTGCTGGGGCTGGTTTCCCAGAAGATTCTGAGCCAATCAGTATT
PheThrLeuLeuHisPheAlaGlyAlaGlyPheProGluAspSerGluProIleSerIle

TCGCATGGCAACTATACAAAACAGTATCCGGTGTTTGTGGGCCACAAGCCAGGACGGAAC
SerHisGlyAsnTyrThrLysGlnTyrProValPheValGlyHisLysProGlyArgAsn

ACCACACAGAGGCACAGGCTGGACATCCAGATGATTATGATCATGAACGGAACCCTCTAC
ThrThrGlnArgHisArgLeuAspIleGlnMetIleMetIleMetAsnGlyThrLeuTyr

ATTGCTGCTAGGGACCATATTTATACTGTTGATATAGACACATCACACACGGAAGAAATT
IleAlaAlaArgAspHisIleTyrThrValAspIleAspThrSerHisThrGluGluIle

TATTGTAGCAAAAAACTGACATGGAAATCTAGACAGGCCGATGTAGACACATGCAGAATG
TyrCysSerLysLysLeuThrTrpLysSerArgGlnAlaAspValAspThrCysArgMet

AAGGGAAAACATAAGGATGAGTGCCACAACTTTATTAAAGTTCTTCTAAAGAAAAACGAT
LysGlyLysHisLysAspGluCysHisAsnPheIleLysValLeuLeuLysLysAsnAsp

GATGCATTGTTTGTCTGTGGAACTAATGCCTTCAACCCTTCCTGCAGAAACTATAAGATG
AspAlaLeuPheValCysGlyThrAsnAlaPheAsnProSerCysArgAsnTyrLysMet

GATACATTGGAACCATTCGGGGATGAATTCAGCGGAATGGCCAGATGCCCATATGATGCC
AspThrLeuGluProPheGlyAspGluPheSerGlyMetAlaArgCysProTyrAspAla

AAACATGCCAACGTTGCACTGTTTGCAGATGGAAAACTATACTCAGCCACAGTGACTGAC
LysHisAlaAsnValAlaLeuPheAlaAspGlyLysLeuTyrSerAlaThrValThrAsp

TTCCTTGCCATTGACGCAGTCATTTACCGGAGTCTTGGAGAAAGCCCTACCCTGCGGACC
PheLeuAlaIleAspAlaValIleTyrArgSerLeuGlyGluSerProThrLeuArgThr

GTCAAGCACGATTCAAAATGGTTGAAAGAACCATACTTTGTTCAAGCCGTGGATTACGGA
ValLysHisAspSerLysTrpLeuLysGluProTyrPheValGlnAlaValAspTyrGly

GATTATATCTACTTCTTCTTCAGGGAAATAGCAGTGGAGTATAACACCATGGGAAAGGTA
AspTyrIleTyrPhePhePheArgGluIleAlaValGluTyrAsnThrMetGlyLysVal

GTTTTCCCAAGAGTGGCTCAGGTTTGTAAGAATGATATGGGAGGATCTCAAAGAGTCCTG
ValPheProArgValAlaGlnValCysLysAsnAspMetGlyGlySerGlnArgValLeu

GAGAAACAGTGGACGTCGTTCCTGAAGGCGCGCTTGAACTGCTCAGTTCCTGGAGACTCT
GluLysGlnTrpThrSerPheLeuLysAlaArgLeuAsnCysSerValProGlyAspSer

CATTTTTATTTCAACATTCTCCAGGCAGTTACAGATGTGATTCGTATCAACGGGCGTGAT
HisPheTyrPheAsnIleLeuGlnAlaValThrAspValIleArgIleAsnGlyArgAsp

GTTGTCCTGGCAACGTTTTCTACACCTTATAACAGCATCCCTGGGTCTGCAGTCTGTGCC
ValValLeuAlaThrPheSerThrProTyrAsnSerIleProGlySerAlaValCysAla
```

Fig. 3

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TATGACATGCTTGACATTGCCAGTGTTTTTACTGGGAGATTCAAGGAACAGAAGTCTCCT
TyrAspMetLeuAspIleAlaSerValPheThrGlyArgPheLysGluGlnLysSerPro

GATTCCACCTGGACACCAGTTCCTGATGAACGAGTTCCTAAGCCCAGGCCAGGTTGCTGT
AspSerThrTrpThrProValProAspGluArgValProLysProArgProGlyCysCys

GCTGGCTCATCCTCCTTAGAAAGATATGCAACCTCCAATGAGTTCCCTGATGATACCCTG
AlaGlySerSerSerLeuGluArgTyrAlaThrSerAsnGluPheProAspAspThrLeu

AACTTCATCAAGACGCACCCGCTCATGGATGAGGCAGTGCCCTCCATCTTCAACAGGCCA
AsnPheIleLysThrHisProLeuMetAspGluAlaValProSerIlePheAsnArgPro

TGGTTCCTGAGAACAATGGTCAGATACCGCCTTACCAAAATTGCAGTGGACACAGCTGCT
TrpPheLeuArgThrMetValArgTyrArgLeuThrLysIleAlaValAspThrAlaAla

GGGCCATATCAGAATCACACTGTGGTTTTTCTGGGATCAGAGAAGGGAATCATCTTGAAG
GlyProTyrGlnAsnHisThrValValPheLeuGlySerGluLysGlyIleIleLeuLys

TTTTTGGCCAGAATAGGAAATAGTGGTTTTCTAAATGACAGCCTTTTCCTGGAGGAGATG
PheLeuAlaArgIleGlyAsnSerGlyPheLeuAsnAspSerLeuPheLeuGluGluMet

AGTGTTTACAACTCTGAAAAATGCAGCTATGATGGAGTCGAAGACAAAAGGATCATGGGC
SerValTyrAsnSerGluLysCysSerTyrAspGlyValGluAspLysArgIleMetGly

ATGCAGCTGGACAGAGCAAGCAGCTCTCTGTATGTTGCGTTCTCTACCTGTGTGATAAAG
MetGlnLeuAspArgAlaSerSerSerLeuTyrValAlaPheSerThrCysValIleLys

GTTCCCCTTGGCCGGTGTGAACGACATGGGAAGTGTAAAAAAACCTGTATTGCCTCCAGA
ValProLeuGlyArgCysGluArgHisGlyLysCysLysLysThrCysIleAlaSerArg

GACCCATATTGTGGATGGATAAAGGAAGGTGGTGCCTGCAGCCATTTATCACCCAACAGC
AspProTyrCysGlyTrpIleLysGluGlyGlyAlaCysSerHisLeuSerProAsnSer

AGACTGACTTTTGAGCAGGACATAGAGCGTGGCAATACAGATGGTCTGGGGGACTGTCAC
ArgLeuThrPheGluGlnAspIleGluArgGlyAsnThrAspGlyLeuGlyAspCysHis

AATTCCTTTGTGGCACTGAATGGAGTGATTCGGGAAAGTTACCTCAAAGGCCACGACCAG
AsnSerPheValAlaLeuAsnGlyValIleArgGluSerTyrLeuLysGlyHisAspGln

CTGGTTCCCGTCACCCTCTTGGCCATTGCAGTCATCCTGGCTTTCGTCATGGGGGCCGTC
LeuValProValThrLeuLeuAlaIleAlaValIleLeuAlaPheValMetGlyAlaVal

TTCTCGGGCATCACCGTCTACTGCGTCTGTGATCATCGGCGCAAAGACGTGGCTGTGGTG
PheSerGlyIleThrValTyrCysValCysAspHisArgArgLysAspValAlaValVal

CAGCGCAAGGAGAAGGAGCTCACCCACTCGCGCCGGGGCTCCATGAGCAGCGTCACCAAG
GlnArgLysGluLysGluLeuThrHisSerArgArgGlySerMetSerSerValThrLys

CTCAGCGGCCTCTTTGGGGACACTCAATCCAAAGACCCAAAGCCGGAGGCCATCCTCACG
LeuSerGlyLeuPheGlyAspThrGlnSerLysAspProLysProGluAlaIleLeuThr

CCACTCATGCACAACGGCAAGCTCGCCACTCCCGGCAACACGGCCAAGATGCTCATTAAA
ProLeuMetHisAsnGlyLysLeuAlaThrProGlyAsnThrAlaLysMetLeuIleLys
```

Fig. 3
(Continued)

GCAGACCAGCACCACCTGGACCTGACGGCCCTCCCCACCCCAGAGTCAACCCCAACGCTG
AlaAspGlnHisHisLeuAspLeuThrAlaLeuProThrProGluSerThrProThrLeu

CAGCAGAAGCGGGAACCCAGCCGCGGCACCCGCGAGTGGGAGAGGAACCAGAACCTCATC
GlnGlnLysArgGluProSerArgGlyThrArgGluTrpGluArgAsnGlnAsnLeuIle

AATGCCTGCACAAAGGACATGCCCCCCATGGGCTCCCCTGTGATTCCCACGGACCTGCCC
AsnAlaCysThrLysAspMetProProMetGlySerProValIleProThrAspLeuPro

CTGCGGGCCTCCCCCAGCCACATCCCCAGCGTGGTGGTCCTGCCCATCACGCAGCAGGGC
LeuArgAlaSerProSerHisIleProSerValValValLeuProIleThrGlnGlnGly

TACCAGCATGAGTACGTGGACCAGCCCAAAATGAGCGAGGTGGCCCAGATGGCGCTGGAG
TyrGlnHisGluTyrValAspGlnProLysMetSerGluValAlaGlnMetAlaLeuGlu

GACCAGGCCGCCACACTGGAGTATAAGACCATCAAGGAACATCTCAGCAGCAAGAGTCCC
AspGlnAlaAlaThrLeuGluTyrLysThrIleLysGluHisLeuSerSerLysSerPro

AACCATGGGGTGAACCTTGTGGAGAACCTGGACAGCCTGCCCCCCAAAGTTCCACAGCGG
AsnHisGlyValAsnLeuValGluAsnLeuAspSerLeuProProLysValProGlnArg

GAGGCCTCCCTGGGTCCCCCGGGAGCCTCCCTGTCTCAGACCGGTCTAAGCAAGCGGCTG
GluAlaSerLeuGlyProProGlyAlaSerLeuSerGlnThrGlyLeuSerLysArgLeu

GAAATGCACCACTCCTCTTCCTACGGGGTTGACTATAAGAGGAGCTACCCCACGAACTCG
GluMetHisHisSerSerSerTyrGlyValAspTyrLysArgSerTyrProThrAsnSer

CTCACGAGAAGCCACCTGACCACCTACTCTCATCAGAAGCAACACTAACCCCGACAATTC
LeuThrArgSerHisLeuThrThrTyrSerHisGlnLysGlnHis

ANCTCTGACTTCAAAGGGACCAGAGCTTTGGCAGGGGAGACAACCCGCCGCCCGCCCCGC

AGAGGGTGGACTCCATCCAGGTGCACAGCTCCCAGCCATCTGGCCAGGCCGTGACTGTCT

CGAGGCAGCCCAGCCTCAACGCCTACAACTCACTGACAAGGTCGGGGCTGAAGCGTACGC

CCTCGCTAAAGCCGGACGTACCCCCCAAACCATCCTTTGCTCCCCTTTCCACATCCATGA

AGCCCAATGATGCGTGTACATAATCCCAGGGGGAGGGGGTCAGGTGTCGAACCAGCAGGC

AAGGCGAGGTGTCCGCTCAGCTCAGCAAGGTTCTCAACTGCCTCGAGTACCCACCAAACC

AAAAAGGCCTGCGGCAGAACCGAGGGACGCTGGGTCCTCCTCTCTGGGACACAGGGGTAC

TCACGAAAACTGGGCCGCGTGGTTTGGTGAAAG

Fig. 3
(Countinued)

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TCTCCCCTTTCCAGCTGAAAGGCTATTGTTCATGAGATTAGAATTCCAGTCAACACTGGT

ATTGGAAACTATTTTGCAGTAGTAGACAAGGGAGTTCGCAATCATTCATATCATTACATT

TCTGTGTTTTCTCTGTGATGATCATGAACATTGCTCAGAGCAATGCTGTGATATCACAGT
                  MetIleMetAsnIleAlaGlnSerAsnAlaValIleSerGlnTrp

GGCTATTTATGATTAGATCATTTCATTGCATGCTTACACTTTTCATGGAAAAATGTAACA
  LeuPheMetIleArgSerPheHisCysMetLeuThrLeuPheMetGluLysCysAsnLys

AATGTCAAAATATAAATCAGAAATTCTTGCTCCAAATAATTGCAAAGAACTTGTTTTCAA
  CysGlnAsnIleAsnGlnLysPheLeuLeuGlnIleIleAlaLysAsnLeuPheSerThr

CCCCACTTTTGGAATATTCAAAAAAGTTTAGGGTAATTACCAGGTTTGGTGTGTGTCACT
  ProLeuLeuGluTyrSerLysLysPheArgValIleThrArgPheGlyValCysHisPhe

TCTGGGCTGAGAGGGATTTTAGGTTTCAGAGAAATAAATTGTGTTTTACCGGGAGCCGGT
  TrpAlaGluArgAspPheArgPheGlnArgAsnLysLeuCysPheThrGlySerArgCys

GTTGTCCATGTAGGTTCAGGGCTTTTAGAAATTTTAGGTGTAATTGTTCCGGCACTTGTG
  CysProCysArgPheArgAlaPheArgAsnPheArgCysAsnCysSerGlyThrCysGly

GTTCTTTCAGGTTTGGTTCTTGGCGGTTTGGGCCGGGGGCGTCGTTTAGGTGTAGAAGGG
  SerPheArgPheGlySerTrpArgPheGlyProGlyAlaSerPheArgCysArgArgAsp

ATAGATGTAGTTTGCTGGGGAGCAGGTGTCGTAGGCTGCATTTCTGGACTGGTAAAGATT
  ArgCysSerLeuLeuGlySerArgCysArgArgLeuHisPheTrpThrGlyLysAspPhe

TCCAGTTTTTGAGGAACAAATGGTGTTTCACTTGGAGCCAGTGTTGCCCTTGGCTGTTCA
  GlnPheLeuArgAsnLysTrpCysPheThrTrpSerGlnCysCysProTrpLeuPheLys

AGAGTTCTAGAAGTTTTAGGTGGGATAGAATCCAGAATACGATCACTTGTTGCTGGGTAG
  SerSerArgSerPheArgTrpAspArgIleGlnAsnThrIleThrCysCysTrpValGly

GAATCTGATATCTCAGGCTCATCTAATGTTGTAGGGCTTGAGAAAACATCATAAGTTGCA
  Ile

GTTTGAGGCTGCAGAACTTTGGAATCTTTCCAGAATTTCCTGAGGCAAAAACACCCTTCC

CTTTTGAAAAACCTAG
```

Fig. 4

```
CACTTCCCCCTTTTGTTAATTAAAACTAAGAAGTCGGAATGGGAACGAGGTGCCCAGCTC

CCGTGGAGAAAGCTTAAGGACACCACGCCAGTGCTTTCCTGCCTTCCTTCCGAGATGGAA

AGAGGAGCTCCTAGCTCACTTAAGCCGGGGTAGGGCTGGTTCTCCTTTCCGAGCCAAAAT

CCCAGGCGATGGTGAATTATGAACGTGCCACACCATGAAGCTCTTGTGGCAGGTAACTGT
                                        MetLysLeuLeuTrpGlnValThrVal

GCACCACCACACCTGGAATGCCATCCTGCTCCCGTTCGTCTACCTCACGGCGCAAGTGTG
 HisHisHisThrTrpAsnAlaIleLeuLeuProPheValTyrLeuThrAlaGlnValTrp

GATTCTGTGTGCAGCCATCGCTGCTGCCGCCTCAGCCGGGCCCCAGAACTGCCCCTCCGT
 IleLeuCysAlaAlaIleAlaAlaAlaAlaSerAlaGlyProGlnAsnCysProSerVal

CTGCTCGTGCAGTAACCAGTTCAGCAAGGTGGTGTGCACGCGCCGGGGCCTCTCCGAGGT
 CysSerCysSerAsnGlnPheSerLysValValCysThrArgArgGlyLeuSerGluVal

CCCGCAGGGTATTCCCTCGAACACCCGGTACCTCAACCTCATGGAGAACAACATCCAGAT
 ProGlnGlyIleProSerAsnThrArgTyrLeuAsnLeuMetGluAsnAsnIleGlnMet

GATCCAGGCCGACACCTTCCGCCACCTCCACCACCTGGAGGTCCTGCAGTTGGGCAGGAA
 IleGlnAlaAspThrPheArgHisLeuHisHisLeuGluValLeuGlnLeuGlyArgAsn

CTCCATCCGGCAGATTGAGGTGGGGGCCTTCAACGGCCTGGCCAGCCTCAGCACCCTGGA
 SerIleArgGlnIleGluValGlyAlaPheAsnGlyLeuAlaSerLeuSerThrLeuGlu

GCTGTTCGACAACTGGCTGACAGTCATCCCTAGCGGGGCCTTTGAATACCTGTCCAAGCT
 LeuPheAspAsnTrpLeuThrValIleProSerGlyAlaPheGluTyrLeuSerLysLeu

GCGGGAGCTCTGGCTTCGCAACAACCCCATCGAAAGCATCCCCTCTTACGCCTTCAACCG
 ArgGluLeuTrpLeuArgAsnAsnProIleGluSerIleProSerTyrAlaPheAsnArg

GGTGCCCTCCCTCATGCGCCTGGACTTGGGGGAGCTCAAGAAGCTGGAGTATATCTCTGA
 ValProSerLeuMetArgLeuAspLeuGlyGluLeuLysLysLeuGluTyrIleSerGlu

GGGAGCTTTTGAGGGGCTGTTCAACCTCAAGTATCTGAACTTGGGCATGTGCAACATTAA
 GlyAlaPheGluGlyLeuPheAsnLeuLysTyrLeuAsnLeuGlyMetCysAsnIleLys

AGACATGCCCAATCTCACCCCCCTGGTGGGGCTGGAGGAGCTGGAGATGTCAGGGAACCA
 AspMetProAsnLeuThrProLeuValGlyLeuGluGluLeuGluMetSerGlyAsnHis

CTTCCCTGAGATCAGGCCTGGCTCCTTCCATGGCCTGAGCTCCCTCAAGAAGCTCTGGGT
 PheProGluIleArgProGlySerPheHisGlyLeuSerSerLeuLysLysLeuTrpVal

CATGAACTCACAGGTCAGCCTGATTGAGCGGAATGCTTTTGACGGGCTGGCTTCACTTGT
 MetAsnSerGlnValSerLeuIleGluArgAsnAlaPheAspGlyLeuAlaSerLeuVal

GGAACTCAACTTGGCCCACAATAACCTCTCTTCTTTGCCCCATGACCTCTTTACCCCGCT
 GluLeuAsnLeuAlaHisAsnAsnLeuSerSerLeuProHisAspLeuPheThrProLeu

GAGGTACCTGGTGGAGTTGCATCTACACCACAACCCTTGGAACTGTGATTGTGACATTCT
 ArgTyrLeuValGluLeuHisLeuHisHisAsnProTrpAsnCysAspCysAspIleLeu

GTGGCTAGCCTGGTGGCTTCGAGAGTATATACCCACCAATTCCACCTGCTGTGGCCGCTG
 TrpLeuAlaTrpTrpLeuArgGluTyrIleProThrAsnSerThrCysCysGlyArgCys
```

Fig. 5

```
TCATGCTCCCATGCACATGCGAGGCCGCTACCTCGTGGAGGTGGACCAGGCCTCCTTCCA
 HisAlaProMetHisMetArgGlyArgTyrLeuValGluValAspGlnAlaSerPheGln

GTGCTCTGCCCCCTTCATCATGGACGCACCTCGAGACCTCAACATTTCTGAGGGTCGGAT
 CysSerAlaProPheIleMetAspAlaProArgAspLeuAsnIleSerGluGlyArgMet

GGCAGAACTTAAGTGTCGGACTCCCCCTATGTCCTCCGTGAAGTGGTTGCTGCCCAATGG
 AlaGluLeuLysCysArgThrProProMetSerSerValLysTrpLeuLeuProAsnGly

GACAGTGCTCAGCCACGCCTCCCGCCACCCAAGGATCTCTGTCCTCAACGACGGCACCTT
 ThrValLeuSerHisAlaSerArgHisProArgIleSerValLeuAsnAspGlyThrLeu

GAACTTTTCCCACGTGCTGCTTTCAGACACTGGGGTGTACACATGCATGGGGACCAATGT
 AsnPheSerHisValLeuLeuSerAspThrGlyValTyrThrCysMetGlyThrAsnVal

TGCAGGCAACTCCAACGCCTCGGCCTACCTCAATGGGAGCACGGCTGAGCTTAACACCTC
 AlaGlyAsnSerAsnAlaSerAlaTyrLeuAsnGlySerThrAlaGluLeuAsnThrSer

CAACTACAGCTTCTTCACCACAGGAACAGGGGAGACCACGGAGATCTCGCCTGAGGACAC
 AsnTyrSerPhePheThrThrGlyThrGlyGluThrThrGluIleSerProGluAspThr

AACGCGAAAGTACAAGCCTGTTCCTACCACGTCCACTGGTTACCAGCCGGCATATACCAC
 ThrArgLysTyrLysProValProThrThrSerThrGlyTyrGlnProAlaTyrThrThr

CTCTACCACGGTGCTCATTCAGACTACCCGTGTGCCCAAGCAGGTGGCAGTACCCGCGAC
 SerThrThrValLeuIleGlnThrThrArgValProLysGlnValAlaValProAlaThr

AGACACCACTGACAAGATGCAGACCAGCCTGGATGAAGTCATGAAGACCACCAAGATCAT
 AspThrThrAspLysMetGlnThrSerLeuAspGluValMetLysThrThrLysIleIle

CATTGGCTGCTTTGTGGCAGTGACTCTGCTAGCTGCCGCCATGTTGATTGTCTTCTATAA
 IleGlyCysPheValAlaValThrLeuLeuAlaAlaAlaMetLeuIleValPheTyrLys

ACTTCGTAAGCGGCACCAGCAGCGGAGTACAGTCACAGCCGCCCGGACTGTTGAGATAAT
 LeuArgLysArgHisGlnGlnArgSerThrValThrAlaAlaArgThrValGluIleIle

CCAGGTGGACGAAGACATCCCAGCAGCAACATCCGCAGCAGCAACAGCAGCTCCGTCCGG
 GlnValAspGluAspIleProAlaAlaThrSerAlaAlaAlaThrAlaAlaProSerGly

TGTATCAGGTGAAGGGGCAGTAGTGCTGCCCACAATTCATGACCATATTAACTACAACAC
 ValSerGlyGluGlyAlaValValLeuProThrIleHisAspHisIleAsnTyrAsnThr

CTACAAACCAGCACATGGGGCCCACTGGACAGAAAACAGCCTGGGGAACTCTCTGCACCC
 TyrLysProAlaHisGlyAlaHisTrpThrGluAsnSerLeuGlyAsnSerLeuHisPro

CACAGTCACCACTATCTCTGAACCTTATATAATTCAGACCCATACCAAGGACAAGGTACA
 ThrValThrThrIleSerGluProTyrIleIleGlnThrHisThrLysAspLysValGln

GGAAACTCAAATATGACTCCCCTCCCCCAAAAAACTTATAAAATGCAATAGAATGCACAC
 GluThrGlnIle

AAAGACAGCAACTTTTGTACAGAGTGGGGAGAGACTTTTTCTTGTATATGCTTATATATT

AAGTCTATGGGCTGGTTAAAAAAAACAGATTATATTAAAATTTAAAGACAAAAAGTCAAA

A
```

Fig. 5
(Continued)

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CACTTCCCCCTTTTGTTAATTAAAACTAAGAAGTCGGAATGGGAACGAGGTGCCCAGCTC

CCGTGGAGAAAGCTTAAGGACACCACGCCAGTGCTTTCCTGCCTTCCTTCCGAGATGGAA

AGAGGAGCTCCTAGCTCACTTAAGCCGGGGTAGGGCTGGTTCTCCTTTCCGAGCCAAAAT

CCCAGGCGATGGTGAATTATGAACGTGCCACACCATGAAGCTCTTGTGGCAGGTAACTGT
                                        MetLysLeuLeuTrpGlnValThrVal

GCACCACCACACCTGGAATGCCATCCTGCTCCCGTTCGTCTACCTCACGGCGCAAGTGTG
 HisHisHisThrTrpAsnAlaIleLeuLeuProPheValTyrLeuThrAlaGlnValTrp

GATTCTGTGTGCAGCCATCGCTGCTGCCGCCTCAGCCGGGCCCCAGAACTGCCCCTCCGT
 IleLeuCysAlaAlaIleAlaAlaAlaAlaSerAlaGlyProGlnAsnCysProSerVal

CTGCTCGTGCAGTAACCAGTTCAGCAAGGTGGTGTGCACGCGCCGGGGCCTCTCCGAGGT
 CysSerCysSerAsnGlnPheSerLysValValCysThrArgArgGlyLeuSerGluVal

CCCGCAGGGTATTCCCTCGAACACCCGGTACCTCAACCTCATGGAGAACAACATCCAGAT
 ProGlnGlyIleProSerAsnThrArgTyrLeuAsnLeuMetGluAsnAsnIleGlnMet

GATCCAGGCCGACACCTTCCGCCACCTCCACCACCTGGAGGTCCTGCAGTTGGGCAGGAA
 IleGlnAlaAspThrPheArgHisLeuHisHisLeuGluValLeuGlnLeuGlyArgAsn

CTCCATCCGGCAGATTGAGGTGGGGGCCTTCAACGGCCTGGCCAGCCTCAGCACCCTGGA
 SerIleArgGlnIleGluValGlyAlaPheAsnGlyLeuAlaSerLeuSerThrLeuGlu

GCTGTTCGACAACTGGCTGACAGTCATCCCTAGCGGGGCCTTTGAATACCTGTCCAAGCT
 LeuPheAspAsnTrpLeuThrValIleProSerGlyAlaPheGluTyrLeuSerLysLeu

GCGGGAGCTCTGGCTTCGCAACAACCCCATCGAAAGCATCCCCTCTTACGCCTTCAACCG
 ArgGluLeuTrpLeuArgAsnAsnProIleGluSerIleProSerTyrAlaPheAsnArg

GGTGCCCTCCCTCATGCGCCTGGACTTGGGGGAGCTCAAGAAGCTGGAGTATATCTCTGA
 ValProSerLeuMetArgLeuAspLeuGlyGluLeuLysLysLeuGluTyrIleSerGlu

GGGAGCTTTTGAGGGGCTGTTCAACCTCAAGTATCTGAACTTGGGCATGTGCAACATTAA
 GlyAlaPheGluGlyLeuPheAsnLeuLysTyrLeuAsnLeuGlyMetCysAsnIleLys

AGACATGCCCAATCTCACCCCCCTGGTGGGGCTGGAGGAGCTGGAGATGTCAGGGAACCA
 AspMetProAsnLeuThrProLeuValGlyLeuGluGluLeuGluMetSerGlyAsnHis

CTTCCCTGAGATCAGGCCTGGCTCCTTCCATGGCCTGAGCTCCCTCAAGAAGCTCTGGGT
 PheProGluIleArgProGlySerPheHisGlyLeuSerSerLeuLysLysLeuTrpVal

CATGAACTCACAGGTCAGCCTGATTGAGCGGAATGCTTTTGACGGGCTGGCTTCACTTGT
 MetAsnSerGlnValSerLeuIleGluArgAsnAlaPheAspGlyLeuAlaSerLeuVal

GGAACTCAACTTGGCCCACAATAACCTCTCTTCTTTGCCCCATGACCTCTTTACCCCGCT
 GluLeuAsnLeuAlaHisAsnAsnLeuSerSerLeuProHisAspLeuPheThrProLeu

GAGGTACCTGGTGGAGTTGCATCTACACCACAACCCTTGGAACTGTGATTGTGACATTCT
 ArgTyrLeuValGluLeuHisLeuHisHisAsnProTrpAsnCysAspCysAspIleLeu

GTGGCTAGCCTGGTGGCTTCGAGAGTATATACCCACCAATTCCACCTGCTGTGGCCGCTG
 TrpLeuAlaTrpTrpLeuArgGluTyrIleProThrAsnSerThrCysCysGlyArgCys

TCATGCTCCCATGCACATGCGAGGCCGCTACCTCGTGGAGGTGGACCAGGCCTCCTTCCA
 HisAlaProMetHisMetArgGlyArgTyrLeuValGluValAspGlnAlaSerPheGln
```

Fig. 6

GTGCTCTGCCCCCTTCATCATGGACGCACCTCGAGACCTCAACATTTCTGAGGGTCGGAT
CysSerAlaProPheIleMetAspAlaProArgAspLeuAsnIleSerGluGlyArgMet

GGCAGAACTTAAGTGTCGGACTCCCCCTATGTCCTCCGTGAAGTGGTTGCTGCCCAATGG
AlaGluLeuLysCysArgThrProProMetSerSerValLysTrpLeuLeuProAsnGly

GACAGTGCTCAGCCACGCCTCCCGCCACCCAAGGATCTCTGTCCTCAACGACGGCACCTT
ThrValLeuSerHisAlaSerArgHisProArgIleSerValLeuAsnAspGlyThrLeu

GAACTTTTCCCACGTGCTGCTTTCAGACACTGGGGTGTACACATGCATGGGGACCAATGT
AsnPheSerHisValLeuLeuSerAspThrGlyValTyrThrCysMetGlyThrAsnVal

TGCAGGCAACTCCAACGCCTCGGCCTACCTCAATGGGAGCACGGCTGAGCTTAACACCTC
AlaGlyAsnSerAsnAlaSerAlaTyrLeuAsnGlySerThrAlaGluLeuAsnThrSer

CAACTACAGCTTCTTCACCACAGGAACAGGGGAGACCACGGAGATCTCGCCTGAGGACAC
AsnTyrSerPhePheThrThrGlyThrGlyGluThrThrGluIleSerProGluAspThr

AACGCGAAAGTACAAGCCTGTTCCTACCACGTCCACTGGTTACCAGCCGGCATATACCAC
ThrArgLysTyrLysProValProThrThrSerThrGlyTyrGlnProAlaTyrThrThr

CTCTACCACGGTGCTCATTCAGACTACCCGTGTGCCCAAGCAGGTGGCAGTACCCGCGAC
SerThrThrValLeuIleGlnThrThrArgValProLysGlnValAlaValProAlaThr

AGACACCACTGACAAGATGCAGACCAGCCTGGATGAAGTCATGAAGACCACCAAGATCAT
AspThrThrAspLysMetGlnThrSerLeuAspGluValMetLysThrThrLysIleIle

CATTGGCTGCTTTGTGGCAGTGACTCTGCTAGCTGCCGCCATGTTGATTGTCTTCTATAA
IleGlyCysPheValAlaValThrLeuLeuAlaAlaAlaMetLeuIleValPheTyrLys

ACTTCGTAAGCGGCACCAGCAGCGGAGTACAGTCACAGCCGCCCCCACACTGGAGAGAAA
LeuArgLysArgHisGlnGlnArgSerThrValThrAlaAlaProThrLeuGluArgLys

ACACAGGGACAAAAACACACCACAACAAAAACACCCACAACAAAAACAACAGCCCCCCCC
HisArgAspLysAsnThrProGlnGlnLysHisProGlnGlnLysGlnGlnProProPro

GGTATAACAGGAAAGGGCACAATAGCGCCCCACAAAACACAACAACATAAAAAACAAAAC
Val

ACACACAAACCAGCACATGGGGCCCACTGGACAGAAAACAGCCTGGGGAACTCTGTGCAC

CCCACAGTCACCACTATCTCTGAACCTTATATAATTCAGACCCATACCAAGGACAAGGTA

CAGGAAACTCAAATATGACTCCCCTCCCCCAAAAAACTTATAAAATGCAATAGAATGCAC

ACAAAGACAGCAACTTTTGTACAGAGTGGGGAGAGACTTTTTCTTGTATATGCTTATATA

TTAAGTCTATGGGCTGGTTAAAAAAAACAGATTATATTAAAATTTAAAGACAAAAAGTCA

AAACAAAAATATTTTCTAACTTGTAAGTTCTATTTAAAGGGGGTGGGGGGGAATCTTGGG

AACGTTGTGGGGTACAAGCCACAAGTTAACTTGCTATGCTGCCAGAAGGGATTTCTGGTA

TAAGGTTGAAATTGCTGAGATAAAATAAACTAAAACAACAAACATCCTTAAAGAGGTAGG

GTGTGGGCTGCTGAAGGGGCAAGAGGGATAGACTGAATCTGTCATTTTTAGAAGATGCTT

CATAGGACACAGGACTATCCATTTCTA

Fig. 6
(Countinued)

GGCGTTTGTGGCCGTCCGGCTNCCCTGACATGCAGATTTCCACCCAGAAGACAGAGAAGG
AGCCAGTGGTCATGGAATGGGCTGGGGTCAAAGACTGGGTGCCTGGGAGCTGAGGCAGCC
ACCGTTTCAGCCTGGCCAGCCCTCTGGACCCCGAGGTTGGACCCTACTGTGACACACCTA
CCATGCGGACACTCTTCAACCTCCTCTGGCTTGCCCTGGCCTGCAGCCCTGTTCACACTA
CCCTGTCAAAGTCAGATGCCAAAAAAGCCGCCTCAAAGACGCTGCTGGAGAAGAGTCAGT
TTTCAGATAAGCCGGTGCAAGACCGGGGTTTGGTGGTGACGGACCTCAAAGCTGAGAGTG
TGGTTCTTGAGCATCGCAGCTACTGCTCGGCAAAGGCCCGGGACAGACACTTTGCTGGGG
ATGTACTGGGCTATGTCACTCCACCAGTGGAACAGCCATGGCTACGATGTCACCAAGGTC
MetTyrTrpAlaMetSerLeuHisGlnTrpAsnSerHisGlyTyrAspValThrLysVal

TTTGGGAGCAAGTTCACACAGATCTCACCCGTCTGGCTGCAGCTGAAGAGACGTGGCCGT
PheGlySerLysPheThrGlnIleSerProValTrpLeuGlnLeuLysArgArgGlyArg

GAGATGTTTGAGGTCACGGGCCTCCACGACGTGGACCAAGGGTGGATGCGAGCTGTCAGG
GluMetPheGluValThrGlyLeuHisAspValAspGlnGlyTrpMetArgAlaValArg

AAGCATGCCAAGGGCCTGCACATAGTGCCTCGGCTCCTGTTTGAGGACTGGACTTACGAT
LysHisAlaLysGlyLeuHisIleValProArgLeuLeuPheGluAspTrpThrTyrAsp

GATTTCCGGAACGTCTTAGACAGTGAGGATGAGATAGAGGAGCTGAGCAAGACCGTGGTC
AspPheArgAsnValLeuAspSerGluAspGluIleGluGluLeuSerLysThrValVal

CAGGTGGCAAAGAACCAGCATTTCGATGGCTTCGTGGTGGAGGTCTGGAACCAGCTGCTA
GlnValAlaLysAsnGlnHisPheAspGlyPheValValGluValTrpAsnGlnLeuLeu

AGCCAGAAGCGCGTGGGCCTCATCCACATGCTCACCCACTTGGCCGAGGCTCTGCACCAG
SerGlnLysArgValGlyLeuIleHisMetLeuThrHisLeuAlaGluAlaLeuHisGln

GCCCGGCTGCTGGCCCTCCTGGTCATCCCGCCTGCCATCACCCCCGGGACCGACCAGCTG
AlaArgLeuLeuAlaLeuLeuValIleProProAlaIleThrProGlyThrAspGlnLeu

GGCATGTTCACGCACAAGGAGTTTGAGCAGCTGGCCCCCGTGCTGGATGGTTTCAGCCTC
GlyMetPheThrHisLysGluPheGluGlnLeuAlaProValLeuAspGlyPheSerLeu

ATGACCTACGACTACTCTACAGCGCATCAGCCTGGCCCTAATGCACCCCTGTCCTGGGTT
MetThrTyrAspTyrSerThrAlaHisGlnProGlyProAsnAlaProLeuSerTrpVal

CGAGCCTGCGTCCAGGTCCTGGACCCGAAGTCCAAGTGGCGAAGCAAAATCCTCCTGGGG
ArgAlaCysValGlnValLeuAspProLysSerLysTrpArgSerLysIleLeuLeuGly

CTCAACTTCTATGGTATGGACTACGCGACCTCCAAGGATGCCCGTGAGCCTGTTGTCGGG
LeuAsnPheTyrGlyMetAspTyrAlaThrSerLysAspAlaArgGluProValValGly

GCCAGGTACATGCAGACACTGAAGTCTGCATTCGTACTCTTAGCAAACTTGGAAAATTTG
AlaArgTyrMetGlnThrLeuLysSerAlaPheValLeuLeuAlaAsnLeuGluAsnLeu

AGGCGAAATTCTTCAAATAAAAAAAAAAAAAAAAAAAATTTTTTCTGTTTCTTCTCTTCT
ArgArgAsnSerSerAsnLysLysLysLysLysAsnPhePheCysPhePheSerSer

GTCTTCTCGTTTGGAGACCACAAACACTAGATCCATTGAATTTGTCCCACAGCTCACGAA
ValPheSerPheGlyAspHisLysHis

TACACCTTTTACCTTTTGGA

Fig. 7A

```
1   GCCTCCCTGACATGCAGCCCTCTGGACCCCGAGGTTGGACCCTAC
    AlaSerLeuThrCysSerProLeuAspProGluValGlyProTyr

46  TGTGACACACCTACCATGCGGACACTCTTCAACCTCCTCTGGCTT
    CysAspThrProThrMetArgThrLeuPheAsnLeuLeuTrpLeu

91  GCCCTGGCCTGCAGCCCTGTTCACACTACCCTGTCAAAGTCAGAT
    AlaLeuAlaCysSerProValHisThrThrLeuSerLysSerAsp

136 GCCAAAAAAGCCGCCTCAAAGACGCTGCTGGAGAAGAGTCAGTTT
    AlaLysLysAlaAlaSerLysThrLeuLeuGluLysSerGlnPhe

181 TCAGATAAGCCGGTGCAAGACCGGGGTTTGGTGGTGACGGACCTC
    SerAspLysProValGlnAspArgGlyLeuValValThrAspLeu

226 AAAGCTGAGAGTGTGGTTCTTGAGCATCGCAGCTACTGCTCGGCA
    LysAlaGluSerValValLeuGluHisArgSerTyrCysSerAla

271 AAGGCCCGGGACAGACACTTTGCTGGGGATGTACTGGGCTATGTC
    LysAlaArgAspArgHisPheAlaGlyAspValLeuGlyTyrVal

316 ACTCCATGGAACAGCCATGGCTACGATGTCACCAAGGTCTTTGGG
    ThrProTrpAsnSerHisGlyTyrAspValThrLysValPheGly

361 AGCAAGTTCACACAGATCTCACCCGTCTGGCTGCAGCTGAAGAGA
    SerLysPheThrGlnIleSerProValTrpLeuGlnLeuLysArg

406 CGTGGCCGTGAGATGTTTGAGGTCACGGGCCTCCACGACGTGGAC
    ArgGlyArgGluMetPheGluValThrGlyLeuHisAspValAsp

451 CAAGGGTGGATGCGAGCTGTCAGGAAGCATGCCAAGGGCCTGCAC
    GlnGlyTrpMetArgAlaValArgLysHisAlaLysGlyLeuHis

496 ATAGTGCCTCGGCTCCTGTTTGAGGACTGGACTTACGATGATTTC
    IleValProArgLeuLeuPheGluAspTrpThrTyrAspAspPhe

541 CGGAACGTCTTAGACAGTGAGGATGAGATAGAGGAGCTGAGCAAG
    ArgAsnValLeuAspSerGluAspGluIleGluGluLeuSerLys

586 ACCGTGGTCCAGGTGGCAAAGAACCAGCATTTCGATGGCTTCGTG
    ThrValValGlnValAlaLysAsnGlnHisPheAspGlyPheVal

631 GTGGAGGTCTGGAACCAGCTGCTAAGCCAGAAGCGCGTGGGCCTC
    ValGluValTrpAsnGlnLeuLeuSerGlnLysArgValGlyLeu

676 ATCCACATGCTCACCCACTTGGCCGAGGCTCTGCACCAGGCCCGG
    IleHisMetLeuThrHisLeuAlaGluAlaLeuHisGlnAlaArg

721 CTGCTGGCCCTCCTGGTCATCCCGCCTGCCATCACCCCCGGGACC
    LeuLeuAlaLeuLeuValIleProProAlaIleThrProGlyThr

766 GACCAGCTGGGCATGTTCACGCACAAGGAGTTTGAGCAGCTGGCC
    AspGlnLeuGlyMetPheThrHisLysGluPheGluGlnLeuAla

811 CCCGTGCTGGATGGTTTCAGCCTCATGACCTACGACTACGCAACA
    ProValLeuAspGlyPheSerLeuMetThrTyrAspTyrAlaThr
```

Fig. 7B

```
 856  CTGTCCTGGGTTCGAGCCTGCGTCCAGGTCCTGGATCCCTGGGGC
      LeuSerTrpValArgAlaCysValGlnValLeuAspProTrpGly

 901  TCAACTTCTATGGTATGGACTACGCGACCTCCAAGGATGCCCGTG
      SerThrSerMetValTrpThrThrArgProProArgMetProVal

 946  AGCCTGTTGTCGGGGCCAGGTACATCCAGACACTGAAGGACCACA
      SerLeuLeuSerGlyProGlyThrSerArgHis
 991  GGCCCCGGATGGTGTGGGACGGCCAGGCCTCAGAGCACTTCTTCG
1036  AGTACAAGAAGAGCCGCAGTGGGAGGCACGTCGTCTTCTACCCAA
1081  CCCTGAAGTCCCTGCAGGTGCGGCTGGAGCTGGCCCGGGAGCTGG
1126  GCGTTGGGGTCTCNATNTGGGAGCTGGGCCAGGGCCTGGACTACT
1171  TNTACGACCTGCTCTAGGTGGGCATTGCGGCCTCCGCGGTGGACG
1216  TGTTCTTTTCTAAGCCATGGAGTGAGTGAGCAGGTGTGAAATACA
1261  GGCCTCCACTCCGTTTACAAAAAAAAA
```

Fig. 7B
(Continued)

```
  1  GCCTCCCTGACATGCAGCCCTCTGGACCCCGAGGTTGGACCCTAC
 46  TGTGACACACCTACCATGCGGACACTCTTCAACCTCCTCTGGCTT
 91  GCCCTGGCCTGCAGCCCTGTTCACACTACCCTGTCAAAGTCAGAT
136  GCCAAAAAAGCCGCCTCAAAGACGCTGCTGGAGAAGAGTCAGTTT
181  TCAGATAAGCCGGTGCAAGACCGGGGTTTGGTGGTGACGGACCTC
226  AAAGCTGAGAGTGTGGTTCTTGAGCATCGCAGCTACTGCTCGGCA

271  AAGGCCCGGGACAGACACTTTGCTGGGGATGTACTGGGCTATGTC
                                        MetTyrTrpAlaMetSe

316  ACTCCACCAGTGGAACAGCCATGGCTACGATGTCACCAAGGTCTT
     rLeuHisGlnTrpAsnSerHisGlyTyrAspValThrLysValPh

361  TGGGAGCAAGTTCACACAGATCTCACCCGTCTGGCTGCAGCTGAA
     eGlySerLysPheThrGlnIleSerProValTrpLeuGlnLeuLy

406  GAGACGTGGCCGTGAGATGTTTGAGGTCACGGGCCTCCACGACGT
     sArgArgGlyArgGluMetPheGluValThrGlyLeuHisAspVa

451  GGACCAAGGGTGGATGCGAGCTGTCAGGAAGCATGCCAAGGGCCT
     lAspGlnGlyTrpMetArgAlaValArgLysHisAlaLysGlyLe

496  GCACATAGTGCCTCGGCTCCTGTTTGAGGACTGGACTTACGATGA
     uHisIleValProArgLeuLeuPheGluAspTrpThrTyrAspAs

541  TTTCCGGAACGTCTTAGACAGTGAGGATGAGATAGAGGAGCTGAG
     pPheArgAsnValLeuAspSerGluAspGluIleGluGluLeuSe

586  CAAGACCGTGGTCCAGGTGGCAAAGAACCAGCATTTCGATGGCTT
     rLysThrValValGlnValAlaLysAsnGlnHisPheAspGlyPh

631  CGTGGTGGAGGTCTGGAACCAGCTGCTAAGCCAGAAGCGCGTGGG
     eValValGluValTrpAsnGlnLeuLeuSerGlnLysArgValGl

676  CCTCATCCACATGCTCACCCACTTGGCCGAGGCTCTGCACCAGGC
     yLeuIleHisMetLeuThrHisLeuAlaGluAlaLeuHisGlnAl

721  CCGGCTGCTGGCCCTCCTGGTCATCCCGCCTGCCATCACCCCCGG
     aArgLeuLeuAlaLeuLeuValIleProProAlaIleThrProGl

766  GACCGACCAGCTGGGCATGTTCACGCACAAGGAGTTTGAGCAGCT
     yThrAspGlnLeuGlyMetPheThrHisLysGluPheGluGlnLe

811  GGCCCCCGTGCTGGATGGTTTCAGCCTCATGACCTACGACTACGC
     uAlaProValLeuAspGlyPheSerLeuMetThrTyrAspTyrAl

856  AACACTGTCCTGGGTTCGAGCCTGCGTCCAGGTCCTGGATCCCTG
     aThrLeuSerTrpValArgAlaCysValGlnValLeuAspProTr

901  GGGCTCAACTTCTATGGTATGGACTACGCGACCTCCAAGGATGCC
     pGlySerThrSerMetValTrpThrThrArgProProArgMetPr

946  CGTGAGCCTGTTGTCGGGGCCAGGTACATCCAGACACTGAAGGAC
     oValSerLeuLeuSerGlyProGlyThrSerArgHis
```

Fig. 7C

```
 991  CACAGGCCCCGGATGGTGTGGGACGGCCAGGCCTCAGAGCACTTC
1036  TTCGAGTACAAGAAGAGCCGCAGTGGGAGGCACGTCGTCTTCTAC
1081  CCAACCCTGAAGTCCCTGCAGGTGCGGCTGGAGCTGGCCCGGGAG
1126  CTGGGCGTTGGGGTCTCNATNTGGGAGCTGGGCCAGGGCCTGGAC
1171  TACTTNTACGACCTGCTCTAGGTGGGCATTGCGGCCTCCGCGGTG
1216  GACGTGTTCTTTTCTAAGCCATGGAGTGAGTGAGCAGGTGTGAAA
1261  TACAGGCCTCCACTCCGTTTACAAAAAAAAA
```

Fig. 7C
(Continued)

```
ACGCGTGCAGGTGGCGGAACTTGCTCTAACTTCCTCGGCCGAGCCGGGCCGCGCCGCCGC
TGCCGCCGCCGCGCGCGGATTCTGCTTCTCAGAAGATGCACTATTATAGATACTCTAACG
                                        MetHisTyrTyrArgTyrSerAsnAla

CCAAGGTCAGCTGCTGGTACAAGTACCTCCTTTTCAGCTACAACATCATCTTCTGGTTGG
  LysValSerCysTrpTyrLysTyrLeuLeuPheSerTyrAsnIleIlePheTrpLeuAla

CTGGAGTTGTCTTCCTTGGAGTCGGGTTGTGGGCATGGAGCGAAAAGGGTGTGCTGTCCG
  GlyValValPheLeuGlyValGlyLeuTrpAlaTrpSerGluLysGlyValLeuSerAsp

ACCTCACCAAAGTGACCCGGATGCATGGAATCGACCCTGCGGTGCTGGTCCTGATGGTGG
  LeuThrLysValThrArgMetHisGlyIleAspProAlaValLeuValLeuMetValGly

GCGCGGTGATGTTCACCCTGGGGTTCGCCGGCCGCGTGGGGGCGCGCAGGGAGAATATCT
  AlaValMetPheThrLeuGlyPheAlaGlyArgValGlyAlaArgArgGluAsnIleCys

GCTTGCTCAACTTTTTCTGTGGCACCATCGTGCTCATCTTCTTCCTGGAGCTGGCTGTGG
  LeuLeuAsnPhePheCysGlyThrIleValLeuIlePhePheLeuGluLeuAlaValAla

CCGTGCTGGCCTTCCTGTTCCAGGACTGGGTGAGGGACCGGTTCCGGGAGTTCTTCGAGA
  ValLeuAlaPheLeuPheGlnAspTrpValArgAspArgPheArgGluPhePheGluSer

GCAACATCAAGTCCTACCGGGACGATATCGATCTGCAAAACCTCATCGACTCCCTTCAGA
  AsnIleLysSerTyrArgAspAspIleAspLeuGlnAsnLeuIleAspSerLeuGlnLys

AAGCTAACCAGTGCTGTGGCGCATATGGCCCTGAAGACTGGGACCTCAACGTCTACTTCA
  AlaAsnGlnCysCysGlyAlaTyrGlyProGluAspTrpAspLeuAsnValTyrPheAsn

ATTGCAGCGGTGCCAGCTACAGCCGAGAGAAGTGCGGGGTCCCCTTCTCCTGCTGCGTGC
  CysSerGlyAlaSerTyrSerArgGluLysCysGlyValProPheSerCysCysValPro

CAGATCCTGCGCAAAAAGTTGTGAACACACAGTGTGGATATGATGTCAGGATTCAGCTGA
  AspProAlaGlnLysValValAsnThrGlnCysGlyTyrAspValArgIleGlnLeuLys

AGAGCAAGTGGGATGAGTCCATCTTCACGAAAGGCTGCATCCAGGCGCTGGAAAGCTGGC
  SerLysTrpAspGluSerIlePheThrLysGlyCysIleGlnAlaLeuGluSerTrpLeu

TCCCGCGGAACATTTACATTGTGGCTGGCGTCTTCATCGCCATCTCGCTGTTGCAGATAT
  ProArgAsnIleTyrIleValAlaGlyValPheIleAlaIleSerLeuLeuGlnIlePhe

TTGGCATCTTCCTGGCAAGGACGCTGATCTCAGACATCGAGGCAGTGAAGACCGGCCATC
  GlyIlePheLeuAlaArgThrLeuIleSerAspIleGluAlaValLysThrGlyHisHis

ACTTCTGAGGAGCAGAGTTGAGGGAGCCGAGCTGAGCCACGCTGGGAGGCCAGAGCCTTT
  Phe
CTCTGCCATCAGCCCTACGTCCAGAGGGAGAGGAGCCGACACCCCCAGAGCCAGTGCCCC
ATCTTAAGCATCAGCGTGACGTGACCTCTCTGTTTCTGCTTGCTGGTGCTGAAGACCAAG
GGTCCCCCTTGATACCTGCCCAAACTTGTGACTGCATCCCTCTGGAGTCTACCCAGAGAC
AGAGAATGTGTCTTTATGTGGGAGTGGTGACTCTGAAAGACAGAGAGGGCTCCTGTGGCT
GCCAGGAGGGCTTGACTCAGACCCCCTGCAGCTCAAGCATGTCTGCAGGACACCCTGGTC
CCCTCTCCACTGGCATCCAGACATCTGCTTTGGGTCATCCACATCTGTGGGTGGGCCGTG
GGTAGAGGGACCCACAGGCGTGGACAGGGCATCTCTCTCCATCAAGCAAAGCAGCATGGG
GGCCTGCCCGTAACGGGAGGCGGACGTGGCCCCGCTGGGCCTCTCCGA
```

Fig. 8A

```
  1 CCGCGTGCTGGTCCTGATGGTGGGCGCGGTGATGTTCACCCGGGG
     ArgValLeuValLeuMetValGlyAlaValMetPheThrArgGl

 46 TTCGCCGGCCGCGTGGGGGCGCGCCAGGGAGAATATCTGCTTGCT
    ySerProAlaAlaTrpGlyArgAlaArgGluAsnIleCysLeuLe

 91 CAACTTTTTCTGTGGCACCATCGTGCTCATCTTCTTCCTGGAGCT
    uAsnPhePheCysGlyThrIleValLeuIlePhePheLeuGluLe

136 GGCTGTGGCCGTGCTGGCCTTCCTGTTCCAGGACTGGGTGAGGGA
    uAlaValAlaValLeuAlaPheLeuPheGlnAspTrpValArgAs

181 CCGGTTCCGGGAGTTCTTCGAGAGCAACATCAAGTCCTACCGGGA
    pArgPheArgGluPhePheGluSerAsnIleLysSerTyrArgAs

226 CGATATCGATCTGCAAAACCTCATCGACTCCCTTCAGAAAGCTAA
    pAspIleAspLeuGlnAsnLeuIleAspSerLeuGlnLysAlaAs

271 CCAGTGCTGTGGCGCATATGGCCCTGAAGACTGGGACCTCAACGT
    nGlnCysCysGlyAlaTyrGlyProGluAspTrpAspLeuAsnVa

316 CTACTTCAATTGCAGCGGTGCCAGCTACAGCCGAGAGAAGTGCGG
    lTyrPheAsnCysSerGlyAlaSerTyrSerArgGluLysCysGl

361 GGTCCCCTTCTCCTGCTGCGTGCCAGATCCTGCGCAAAAAGTTGT
    yValProPheSerCysCysValProAspProAlaGlnLysValVa

406 GAACACACAGTGTGGATATGATGTCAGGATTCAGCTGAAGAGCAA
    lAsnThrGlnCysGlyTyrAspValArgIleGlnLeuLysSerLy

451 GTGGGATGAGTCCATCTTCACGAAAGGCTGCATCCAGGCGCTGGA
    sTrpAspGluSerIlePheThrLysGlyCysIleGlnAlaLeuGl

496 AAGCTGGCTCCCGCGGAACATTTACATTGTGGCTGGCGTCTTCAT
    uSerTrpLeuProArgAsnIleTyrIleValAlaGlyValPheIl

541 CGCCATCTCGCTGTTGCAGATATTTGGCATCTTCCTGGCAAGGAC
    eAlaIleSerLeuLeuGlnIlePheGlyIlePheLeuAlaArgTh

586 GCTGATCTCAGACATCGAGGCAGTGAAGGCCGGCCATCACTTCTG
    rLeuIleSerAspIleGluAlaValLysAlaGlyHisHisPhe
631 AGGAGCAGAGTTGAGGGAGCCGAGCTGAGCCACGCTGGGAGGCCA
676 GAGCCTTTCTCTGCCATCAGCCCTACGTCCAGAGGGAGAGGAGCC
721 GACACCCCCAGAGCCAGTGCCCCATCTTAAGCATCAGCGTGACGT
766 GACCTCTCTGTTTCTGCTTGCTGGTGCTGAAGACCAAGGGTCCCC
811 CTTGTT
```

Fig. 8B

```
AACGGCGCAGGTCCCAGCAGCTGGGGTTCCCCCTCAGCCCGTGAGCAGCCATGTCCAACC
                                                    MetSerAsnPro

CCAGCGCCCCACCACCATATGAAGACCGCAACCCCCTGTACCCAGGCCCTCTGCCCCCTG
  SerAlaProProProTyrGluAspArgAsnProLeuTyrProGlyProLeuProProGly

GGGGCTATGGGCAGCCATCTGTCCTGCCAGGAGGGTATCCTGCCTACCCTGGCTACCCGC
  GlyTyrGlyGlnProSerValLeuProGlyGlyTyrProAlaTyrProGlyTyrProGln

AGCCTGGCTACGGTCACCCTGCTGGCTACCCACAGCCCATGCCCCCCACCCACCCGATGC
  ProGlyTyrGlyHisProAlaGlyTyrProGlnProMetProProThrHisProMetPro

CCATGAACTACGGCCCAGGCCATGGCTATGATGGGGAGGAGAGAGCGGTGAGTGATAGCT
  MetAsnTyrGlyProGlyHisGlyTyrAspGlyGluGluArgAlaValSerAspSerPhe

TCGGGCCTGGAGAATGGGATGACCGGAAAGTGCGACACACTTTTATCCGAAAGGTTTACT
  GlyProGlyGluTrpAspAspArgLysValArgHisThrPheIleArgLysValTyrSer

CCATCATCTCCGGGCAGCTGCTCATCACTGGGGCCATCATTGCTATCTTCACCTTTGGGG
  IleIleSerGlyGlnLeuLeuIleThrGlyAlaIleIleAlaIlePheThrPheGlyGlu

AACCTGTCAGCGCCTTTGGCAGGAGAAATGTGGCTGTCTACTACGTGTCCTATGCTGTCT
  ProValSerAlaPheGlyArgArgAsnValAlaValTyrTyrValSerTyrAlaValPhe

TCAGTGTCACCTACCTGATCCTTGCCTGCTGCCAGGGACCCAGACGCCGTTTCCCATGGA
  SerValThrTyrLeuIleLeuAlaCysCysGlnGlyProArgArgArgPheProTrpAsn

ACATCATTCTGCTGACCCTTTTTACTTTTGCCATGGGCTTCATGACGGGCACCATTTCCA
  IleIleLeuLeuThrLeuPheThrPheAlaMetGlyPheMetThrGlyThrIleSerSer

GTATGTACCAAACCAAAGCCGTCATCATTGCAATGATCATCACTGCGGTGGTATCCATTT
  MetTyrGlnThrLysAlaValIleIleAlaMetIleIleThrAlaValValSerIleSer

CAGTCACCATCTTCTGCTTTCAGACCAAGGTGGACTTCACCTCGTGCACAGGCCTCTTCT
  ValThrIlePheCysPheGlnThrLysValAspPheThrSerCysThrGlyLeuPheCys

GTGTCCTGGGAATTGTGCTCCTGGTGACTGGGATTGTCACTAGCATTGTGCTCTACTTCC
  ValLeuGlyIleValLeuLeuValThrGlyIleValThrSerIleValLeuTyrPheGln

AATACGTTTACTGGCTCCACATGCTCTATGCTGCTCTGGGGGCCATTTGTTTCACCCTGT
  TyrValTyrTrpLeuHisMetLeuTyrAlaAlaLeuGlyAlaIleCysPheThrLeuPhe

TCCTGGCTTACGACACACAGCTGGTCCTGGGGAACCGGAAGCACACCATCAGCCCCGAGG
  LeuAlaTyrAspThrGlnLeuValLeuGlyAsnArgLysHisThrIleSerProGluAsp

ACTACATCACTGGCGCCCTGCAGATTTACACAGACATCATCTACATCTTCACCTTTGTGC
  TyrIleThrGlyAlaLeuGlnIleTyrThrAspIleIleTyrIlePheThrPheValLeu

TGCAGCTGATGGGGGATCGCAATTAAGGAGCAAGCCCCCATTTTCACCCGATCCTGGGCT
  GlnLeuMetGlyAspArgAsn
```

Fig. 9A

CTCCCTTCCAAGCTAGAGGGCTGGGCCCTATGACTGTGGTCTGGGCTTTAGGCCCCTTTC
CTTCCCCTTGAGTAACATGCCCAGTTTCCTTTCTGTCCTGGAGACAGGTGGCCTCTCTGG
CTATGGATGTGTGGGTACTTGGTGGGGACGGAGGAGCTAGGGACTAACTGTTGCTCTTGG
TGGGCTTGGCAGGGACTAGGCTGAAGATGTGTCTTCTCCCCGCCACCTACTGTATGACAC
CACATTCTTCCTAACAGCTGGGGTTGTGAGGAATATGAAAAGAGCCTATTCGATAGCTAG
AAGGGAATATGAAAGGTAGAAGTGACTTCAAGGTCACGAGGTTCCCCTCCCACCTCTGTC
ACAGGCTTCTTGACTACGTAGTTGGAGCTATTTCTTCCCCCAGCAAAGCCAGAGAGCTTT
GTCCCCGGCCTCCTGGACACATAGGCCATTATCCTGTATTCCTTTGGCTTGGCATCTTTT
AGCTCAGGAAGGTAGAAGAGATCTGTGCCCATGGGTCTCCTTGCTTCAATCCCTTCTTGT
TTCAGTGACATATGTATTGTTTATCTGGGTTAGGATGGGGGACAGATAATAGAACGAGC
AAAGTAACCTATACAGGCCAGCATGGAACAGCATCTCCCCTGGGCTTGCTCCTGGCTTGT
GACGCTATAAGACAGAGCAGGCCACATGTGGCCATCTGCTCCCCATTCTTGAAAGCTGCT
GGGGCCTCCTTGCAGGCTTCTGGATCC

Fig. 9A
(Continued)

```
1   CGCTCCGTCTGGAACGGCGCAGGTCCCAGCAGCTGGGGTTCCCCC

46  TCAGCCCGTGAGCAGCCATGTCCAACCCCAGCGCCCCACCACCAT
                          MetSerAsnProSerAlaProProProT

91  ATGAAGACCGCAACCCCCTGTACCCAGGCCCTCTGCCCCCTGGGG
    yrGluAspArgAsnProLeuTyrProGlyProLeuProProGlyG

136 GCTATGGGCAGCCATCTGTCCTGCCAGGAGGGTATCCTGCCTACC
    lyTyrGlyGlnProSerValLeuProGlyGlyTyrProAlaTyrP

181 CTGGCTACCCGCAGCCTGGCTACGGTCACCCTGCTGGCTACCCAC
    roGlyTyrProGlnProGlyTyrGlyHisProAlaGlyTyrProG

226 AGCCCATGCCCCCCACCCACCCGATGCCCATGAACTACGGCCCAG
    lnProMetProProThrHisProMetProMetAsnTyrGlyProG

271 GCCATGGCTATGATGGGGAGGAGAGAGCGGTGAGTGATAGCTTCG
    lyHisGlyTyrAspGlyGluGluArgAlaValSerAspSerPheG

316 GGCCTGGAGAGTGGGATGACCGGAAAGTGCGACACACTTTTATCC
    lyProGlyGluTrpAspAspArgLysValArgHisThrPheIleA

361 GAAAGGTTTACTCCATCATCTCCGTGCAGCTGCTCATCACTGTGG
    rgLysValTyrSerIleIleSerValGlnLeuLeuIleThrValA

406 CCATCATTGCTATCTTCACCTTTGTGGAACCTGTCAGCGCCTTTG
    laIleIleAlaIlePheThrPheValGluProValSerAlaPheV

451 TGAGGAGAAATGTGGCTGTCTACTACGTGTCCTATGCTGTCTTCG
    alArgArgAsnValAlaValTyrTyrValSerTyrAlaValPheV

496 TTGTCACCTACCTGATCCTTGCCTGCTGCCAGGGACCCAGACGCC
    alValThrTyrLeuIleLeuAlaCysCysGlnGlyProArgArgA

541 GTTTCCCATGGAACATCATTCTGCTGACCCTTTTTACTTTTGCCA
    rgPheProTrpAsnIleIleLeuLeuThrLeuPheThrPheAlaM

586 TGGGCTTCATGACGGGCACCATTTCCAGTATGTACCAAACCAAAG
    etGlyPheMetThrGlyThrIleSerSerMetTyrGlnThrLysA

631 CCGTCATCATTGCAATGATCATCACTGCGGTGGTATCCATTTCAG
    laValIleIleAlaMetIleIleThrAlaValValSerIleSerV

676 TCACCATCTTCTGCTTTCAGACCAAGGTGAGGGCATGGAGGGCCC
    alThrIlePheCysPheGlnThrLysValArgAlaTrpArgAlaL

721 TTCCCTGGCCCCCCGACTCCCCTTTCTTATCAGGCCCGGACCCCG
    euProTrpProProAspSerProPheLeuSerGlyProAspProG

766 GTACACTAGGGATGTTCCCTAGAGACCTGATCCCCTTCTCCTCAT
    lyThrLeuGlyMetPheProArgAspLeuIleProPheSerSerS

811 CCGCACCTACAAAACTGTGTCCTGTTTCTGTCCTTAGAATGTTGT
    erAlaProThrLysLeuCysProValSerValLeuArgMetLeuT

856 GGACATTCCCATACCCCCTAGGAGGCAGCACTGGGACTCCCTGGC
    rpThrPheProTyrProLeuGlyGlySerThrGlyThrProTrpG
```

Fig. 9B

```
 901  AGGGCCAGTCTGACTGGGCTGGTTGTCACAGCCATCTGACAGGTG
      lnGlyGlnSerAspTrpAlaGlyCysHisSerHisLeuThrGlyA

 946  CCTCTTTCTTGCTTCCTGGCAGGTGGACTTCACCTCGTGCACAGG
      laSerPheLeuLeuProGlyArgTrpThrSerProArgAlaGlnA

 991  CCTCTTCTGTGTCCTGGGAATTGTGCTCCTGGTGACTGGGATTGT
      laSerSerValSerTrpGluLeuCysSerTrp

1036  CACTAGCATTGTGCTCTTAGCATTGTGCTCTACTTCCAATACGTT
1081  TACTGGCTCCACATGCTCTATGCTGCTCTGGGGGCCATTTGTTTC
1126  ACCCTGTTCCTGGCTTACGACACACAGCTGGTCCTGGGGAACCGG
1171  AAGCACACCATCAGCCCCGAGGACTACATCACTGGCGCCCTGCAG
1216  ATTTACACAGACATCATCTACATCTTCACCTTTGTGCTGCAGCTG
1261  ATGGGGGATCGCAATTAAGGAGCAAGCCCCCATTTTCACCCGATC
1306  CTGGGCTCTCCCTTCCAAGCTAGAGGGCTGGGCTCAATGACTGTG
1351  GTCTGGGCTTTAGGCCCCTTTCCTTCCCCTTGAGTAACATGCCCA
1396  GTTTCCTTTCTGTCCTGGAGACAGGTGGCCTCTCTGGCTATGGAT
1441  GTGTGGGTACTTGGTGGGGACGGAGGAGCTAGGGACTAACTGTTG
1486  CTCTTGGTGGGCTTGGCAGGGACTAGGCTGAAGATGTGTCTTCTC
1531  CCCGCCACCTACTGTATGACACCACATTCTTCCTAACAGCTGGGG
1576  TTGTGAGGAATATGAAAAGAGCCTATTCGATAGCTAGAAGGGAAT
1621  ATGAAAGGTAGAAGTGACTTCAAGGTCACGAGGTTCCCCTCCCAC
1666  CTCTGTCACAGGCTTCTTGACTACGTAGTTGGAGCTATTTCTTCC
1711  CCCAGCAAAGCCAGAGAGCTTTGTCCCCGGCCTCCTGGACACATA
1756  GGCCATTATCCTGTATTCCTTTGGCTTGGCATCTTTTAGCTCAGG
1801  AAGGTAGAAGAGATCTGTGCCCATGGGTCTCCTTGCTTCAATCCC
1846  TTCTTGTTTCAGTGACATATGTATTGTTTATCTGGGTTAGGGATG
1891  GGGGACAGATAATAGAACGAGCAAAGTAACCTATACAGGCCAGCA
1936  TGGAACAGCATCTCCCCTGGGCTTGCTCCTGGCTTGTGACGCTAT
1981  AAGACAGAGCAGGCCACATGTGGCCATTCTGCTCCCCATTCTTGA
2026  AAGCTGCTGGGGCCTCCTTGCAGGCTTCTGGATCTCTGGTCAGAG
2071  TGAACTCTTGCTTCCTGTATTCAGGCAGCTCAGAGCAGAAAGTAA
2116  GGGGCAGAGTCATACGTGTGGCCAGGAAGTAGCCAGGGTGAAGAG
2161  AGACTCGGTGCGGGCAGGGAGAATGCCTGGGGGTCCCTCACCTGG
2206  CTAGGGAGATACCGAAGCCTACTGTGGTACTGAAGACTTCTGGGT
2251  TCTTTCCTTCTGCTAACCCAGGGAGGGTCCTAAGAGGAAGGTGAC
2296  TTCTCTCTGTTTGTCTTAAGTTGCACTGGGGGATTTCTGACTTGA
2341  GGCCCATCTCTCCAGCCAGCCACTGCCTTCTTTGTAATATTAAGT
2386  GCCTTGAGCTGGAATGGGGAAGGGGGACAAGGGTCAGTCTGTCGG
2431  GTGGGGGCAGAAATCAAATCAGCCCAAGGATATAGTTAGGATTAA
2476  TTACTTAATAGAGAAATCCTAACTATATCACACAAAGGGATACAA
2521  CTATAAATGTAATAAAATTTATGTCTAGAAGTTAAAAAAAAAAAA
2566  AAAAAAAGT
```

Fig. 9B
(Continued)

```
TTCATAACAAAAATCCAGGCCAGGCACGGTGGCTCATTTTTAAAAGTCAAAAGAAAAAAT

AGTACTTAAAAAATAGAAAAATAAAATACTGTACACCAAAATAAGCTAGAAAAATGGAAC

TAAGAAATAATATTTGAAATTAATATAAAATGAAGCTACAGAAGGCATAAGTAAGTCCAA

ATGTTGGCTCTTTGAAAGACTATTAAATAATTACACAGAAAGTCTAATAAAGAGAAAAGA

GAGAAAAAAACTGTCAGAATGCTACCGAACTGTACTGCTTCTACAGTGAGAACACGGATC

TGACTTGTCGGCAGCCCAAGTGTGACAAGTGCAATGCTGCCTATCCTCACCTGGCTCACC

TGCCATCTGCCATGGCAGACTCATCCTTCCGGTTTCCTCGCACATGGTGGCAGTCTGCGG
            MetAlaAspSerSerPheArgPheProArgThrTrpTrpGlnSerAlaGlu

AGGATGTGCACAGAGAAAAGATCCAGTTAGACCTGGAAGCTGAATTCTACTTCACTCACC
  AspValHisArgGluLysIleGlnLeuAspLeuGluAlaGluPheTyrPheThrHisLeu

TAATTGTGATGTTCAAGTCCCCCAGGCCGGCTGCCATGGTGCTGGACCGCTCCCAGGACT
  IleValMetPheLysSerProArgProAlaAlaMetValLeuAspArgSerGlnAspPhe

TTGGGAAAACATGGAAGCCTTATAAGTACTTTGCGACTAACTGCTCCGCTACATTTGGCC
  GlyLysThrTrpLysProTyrLysTyrPheAlaThrAsnCysSerAlaThrPheGlyLeu

TGGAAGATGATGTTGTCAAGAAGGGCGCTATTTGTACTTCTAAATACTCCAGTCCTTTTC
  GluAspAspValValLysLysGlyAlaIleCysThrSerLysTyrSerSerProPhePro

CATGCACTGGAGGAGAGGTTATTTTCAAAGCTTTGTCACCACCATACGATACAGAGAACC
  CysThrGlyGlyGluValIlePheLysAlaLeuSerProProTyrAspThrGluAsnPro

CTTACAGTGCCAAAGTTCAGGAGCAGCTGAAGATCACCAACCTTCGCGTGCAGCTGCTGA
  TyrSerAlaLysValGlnGluGlnLeuLysIleThrAsnLeuArgValGlnLeuLeuLys

AACGACAGTCTTGTCCCTGTCAGAGAAATGACCTGAACGAAGAGCCTCAACATTTTACAC
  ArgGlnSerCysProCysGlnArgAsnAspLeuAsnGluGluProGlnHisPheThrHis

ACTATGCAATCTATGATTTCATTGTCAAGGGCAGCTGCTTCTGCAATGGCCACGCTGATC
  TyrAlaIleTyrAspPheIleValLysGlySerCysPheCysAsnGlyHisAlaAspGln

AATGCATACCTGTTCATGGCTTCAGACCTGTCAAGGCCCCAGGAACATTCCACATGGTCC
  CysIleProValHisGlyPheArgProValLysAlaProGlyThrPheHisMetValHis

ATGGGAAGTGTATGTGTAAGCACAACACAGCAGGCAGCCACTGCCAGCACTGTGCCCCGT
  GlyLysCysMetCysLysHisAsnThrAlaGlySerHisCysGlnHisCysAlaProLeu

TATACAATGACCGGCCATGGGAGGCAGCTGATGGCAAAACGGGGGCTCCCAACGAGTGCA
  TyrAsnAspArgProTrpGluAlaAlaAspGlyLysThrGlyAlaProAsnGluCysArg

GAACCTGCAAGTGTAATGGGCATGCTGATACCTGTCACTTCGACGTTAATGTGTGGGAGG
  ThrCysLysCysAsnGlyHisAlaAspThrCysHisPheAspValAsnValTrpGluAla

CATCAGGGAATCGTAGTGGTGGTGTCTGTGATGACTGTCAGCACAACACAGAAGGACAGT
  SerGlyAsnArgSerGlyGlyValCysAspAspCysGlnHisAsnThrGluGlyGlnTyr
```

Fig. 10

ATTGCCAGAGGTGCAAGCCAGGCTTCTATCGTGACCTGCGGAGACCCTTCTCAGCTCCAG
CysGlnArgCysLysProGlyPheTyrArgAspLeuArgArgProPheSerAlaProAsp

ATGCTTGCAAACGTAAGTAACCTGTGGTTTCCAGAAAATAGGCTGATTTGTACAAGAGAT
AlaCysLysArgLys

GAATCTCTTTATCCCTCATTCTGCTAACCCAAGAGAAGGAGGTCATTGAGGTTCTGAGAT

AACACACTTACAGATATCGGTTAATTTCTTCATTGATAAGAAGCAAGAATTTTCAACCAT

TGGGTGAAAACAGTATAATATTCATCAAAAGTAATTTCCTTTCTCATTCTNCATAAAGTA

AAAATTATTCCCTATACGCTGCATTTTGGTAAACAGGATGACTAATAGAAAAAAAAATGA

TGAANAAGGAGACTATTTAAGAACTTAAGACTACTTGGGAGTAGAAGGTAGACAATAATG

GACTCANCTGATGAAATAAAGGTAAGTACTGGACTTGGAATATCTTTACCTTACAGGGAA

CTTAAC

Fig. 10
(Continued)

```
GCTCCGCGACTCGGCCTCTCCACCCCCTCCCCAGCCTTTCTCTCGCCCTCTTCTCCCACA

CTCCCGGCCGGCGCCTCGGCTTTGTGCGAGGAGATGGTGTAGCCCCCTGGCCGCCGAAGA

GGAGCCGGACACTTGTCTCCCGTCTCCGAGCTGCTCCCCACCCCTGGAGGAGAGACCCCC

CCCTCGGCTCGGCGCCTTCTGCGTCTCCCGGCTGGTGGGGAAGCCTCTGCGCCGCCGGCA

CCATGAGTGAACAGAGTATCTGTCAGGCAAGAGCTGCTGTGATGGTTTATGATGATGCCA
  MetSerGluGlnSerIleCysGlnAlaArgAlaAlaValMetValTyrAspAspAlaAsn

ATAAGAAGTGGGTGCCAGCTGGTGGCTCAACTGGATTCAGCAGAGTTCATATCTATCACC
  LysLysTrpValProAlaGlyGlySerThrGlyPheSerArgValHisIleTyrHisHis

ATACAGGCAACAACACATTCAGAGTGGTGGGCAGGAAGATTCAGGACCATCAGGTCGTGA
  ThrGlyAsnAsnThrPheArgValValGlyArgLysIleGlnAspHisGlnValValIle

TAAACTGTGCCATTCCTAAAGGGTTGAAGTACAATCAAGCTACACAGACCTTCCACCAGT
  AsnCysAlaIleProLysGlyLeuLysTyrAsnGlnAlaThrGlnThrPheHisGlnTrp

GGCGAGATGCTAGACAGGTGTATGGTCTCAACTTTGGCAGCAAAGAGGATGCCAATGTCT
  ArgAspAlaArgGlnValTyrGlyLeuAsnPheGlySerLysGluAspAlaAsnValPhe

TCGCAAGTGCCATGATGCATGCCTTAGAAGTGTTAAATTCACAGGAAACAGGGCCAACAT
  AlaSerAlaMetMetHisAlaLeuGluValLeuAsnSerGlnGluThrGlyProThrLeu

TGCCTAGACAAAACTCACAACTACCTGCTCAAGTTCAAAATGGCCCATCCCAAGAAGAAT
  ProArgGlnAsnSerGlnLeuProAlaGlnValGlnAsnGlyProSerGlnGluGluLeu

TGGAAATTCAAAGAAGACAACTACAAGAACAGCAACGGCAAAAGGAGCTGGAGCGGGAAA
  GluIleGlnArgArgGlnLeuGlnGluGlnGlnArgGlnLysGluLeuGluArgGluArg

GGCTGAAGCGAGAAAGAATGGAAAGAGAAAGGAAGAAGAGAGAGAGGTTAGAAAGGGAAA
  LeuLysArgGluArgMetGluArgGluArgLysLysArgGluArgLeuGluArgGluArg

GGCTGGAGAGGGAGCGACTGGAACAAGAACAGCTGGAGAGAGAGAGACAAGAACGGGAAC
  LeuGluArgGluArgLeuGluGlnGluGlnLeuGluArgGluArgGlnGluArgGluArg

GGCAGGAACGCCTGGAGCGGCAGGAACGCCTGGAGCGGCAGGAACGCCTGGAGCGGCAGG
  GlnGluArgLeuGluArgGlnGluArgLeuGluArgGlnGluArgLeuGluArgGlnGlu

AACGCCTGGATCGGGAGAGGCAAGAAAGACAAGAACGAGAGAGGCTGGAGAGACTGGAAC
  ArgLeuAspArgGluArgGlnGluArgGlnGluArgGluArgLeuGluArgLeuGluArg

GGGAGAGGCAAGAAAGGGAGCGACAAGAGCAGTTAGAAAGGGAACAGCTGGAATGGGAGA
  GluArgGlnGluArgGluArgGlnGluGlnLeuGluArgGluGlnLeuGluTrpGluArg

GAGAGCGCAGAATATCAAGTGCTGCTGCCCCTGCCTCTGTTGAGACTCCTCTAAACTCTG
  GluArgArgIleSerSerAlaAlaAlaProAlaSerValGluThrProLeuAsnSerVal

TGCTGGGAGACTCTTCTGCTTCTGAGCCAGGCTTGCAGGCAGCCTCTCAGCCGGCCGAGA
  LeuGlyAspSerSerAlaSerGluProGlyLeuGlnAlaAlaSerGlnProAlaGluThr
```

Fig. 11

```
CTCCATCCCAACAGGAAGACAATCGCCCTTTAACTGGACTTGCAGCTGCAATTGCCGGAG
  ProSerGlnGlnGluAspAsnArgProLeuThrGlyLeuAlaAlaAlaIleAlaGlyAla

CAAAACTTAGGAAAGTGTCACGGATGGAGGATACCTCTTTCCCAAGTGGAGGGAATGCTA
  LysLeuArgLysValSerArgMetGluAspThrSerPheProSerGlyGlyAsnAlaIle

TTGGTGTGAACTCCGCCTCATCTAAAACAGATACAGGCCGTGGAAATGGACCCCTTCCTT
  GlyValAsnSerAlaSerSerLysThrAspThrGlyArgGlyAsnGlyProLeuProLeu

TAGGGGGTAGTGGTTTAATGGAAGAAATGAGTGCCCTGCTGGCCACGAGGAGAAGAATTG
  GlyGlySerGlyLeuMetGluGluMetSerAlaLeuLeuAlaThrArgArgArgIleAla

CTGAAAAGGGATCAACAATAGAAACAGAACAAAAAGAGGACAAAGGTGAAGATTCAGAGC
  GluLysGlySerThrIleGluThrGluGlnLysGluAspLysGlyGluAspSerGluPro

CTGTAACTTCTAAGGCCTCTTCAACAAGTACACCTGAACCAACAAGAAAACCTTGGGAAA
  ValThrSerLysAlaSerSerThrSerThrProGluProThrArgLysProTrpGluArg

GAACAAATACAATGAATGGCAGCAAGTCACCTGTTATCTCCAGACCTCCAAGGAAAAATC
  ThrAsnThrMetAsnGlySerLysSerProValIleSerArgProProArgLysAsnGln

AGATTGTTTTTGACAACAGGTCCTATGATTCATTACACAGACCAAAATCCACACCCGTTA
  IleValPheAspAsnArgSerTyrAspSerLeuHisArgProLysSerThrProValIle

TCACAGCCCAGTGCCAATGGAGTCCAGACGGAAGGACTTGACTATGACAGGCTGAAGCAG
  ThrAlaGlnCysGlnTrpSerProAspGlyArgThr

GACATTTTAGATGAAATGAGAAAAGAATTAACAAAGCTAAAAGAAGAGCTCATTGATGCA

ATCAGGCAGGAACTGAGCAAGTCAAATACTGCATAGAGGAACAGACTAAGGAGAGATAGG

ACTTTAATCTGGAGGAAAAATATCCTACAAACAACAACTGTTCACAACAGCAAACCCCTA

CATTTATGAGCTGTAAGAAGAAAATGGAGACAAACAGAAGGAGGGAAAAACCAACCTACT

CTGAAAGCCTTCAGACATTATGACTCTGGTGATAAGCTCTTTCCCTCTCCGTTTGCTGCT

TTTTTCTGGCCAACATCAGAATGGTAACAC
```

Fig. 11
(Continued)

```
CTCCATCCCAACAGGAAGACAATCGCCCTTTAACTGGACTTGCAGCTGCAATTGCCGGAG
  ProSerGlnGlnGluAspAsnArgProLeuThrGlyLeuAlaAlaAlaIleAlaGlyAla

CAAAACTTAGGAAAGTGTCACGGATGGAGGATACCTCTTTCCCAAGTGGAGGGAATGCTA
  LysLeuArgLysValSerArgMetGluAspThrSerPheProSerGlyGlyAsnAlaIle

TTGGTGTGAACTCCGCCTCATCTAAAACAGATACAGGCCGTGGAAATGGACCCCTTCCTT
  GlyValAsnSerAlaSerSerLysThrAspThrGlyArgGlyAsnGlyProLeuProLeu

TAGGGGGTAGTGGTTTAATGGAAGAAATGAGTGCCCTGCTGGCCACGAGGAGAAGAATTG
  GlyGlySerGlyLeuMetGluGluMetSerAlaLeuLeuAlaThrArgArgArgIleAla

CTGAAAAGGGATCAACAATAGAAACAGAACAAAAAGAGGACAAAGGTGAAGATTCAGAGC
  GluLysGlySerThrIleGluThrGluGlnLysGluAspLysGlyGluAspSerGluPro

CTGTAACTTCTAAGGCCTCTTCAACAAGTACACCTGAACCAACAAGAAAACCTTGGGAAA
  ValThrSerLysAlaSerSerThrSerThrProGluProThrArgLysProTrpGluArg

GAACAAATACAATGAATGGCAGCAAGTCACCTGTTATCTCCAGACCTCCAAGGAAAAATC
  ThrAsnThrMetAsnGlySerLysSerProValIleSerArgProProArgLysAsnGln

AGATTGTTTTTGACAACAGGTCCTATGATTCATTACACAGACCAAAATCCACACCCGTTA
  IleValPheAspAsnArgSerTyrAspSerLeuHisArgProLysSerThrProValIle

TCACAGCCCAGTGCCAATGGAGTCCAGACGGAAGGACTTGACTATGACAGGCTGAAGCAG
  ThrAlaGlnCysGlnTrpSerProAspGlyArgThr

GACATTTTAGATGAAATGAGAAAAGAATTAACAAAGCTAAAAGAAGAGCTCATTGATGCA

ATCAGGCAGGAACTGAGCAAGTCAAATACTGCATAGAGGAACAGACTAAGGAGAGATAGG

ACTTTAATCTGGAGGAAAAATATCCTACAAACAACAACTGTTCACAACAGCAAACCCCTA

CATTTATGAGCTGTAAGAAGAAAATGGAGACAAACAGAAGGAGGGAAAAACCAACCTACT

CTGAAAGCCTTCAGACATTATGACTCTGGTGATAAGCTCTTTCCCTCTCCGTTTGCTGCT

TTTTTCTGGCCAACATCAGAATGGTAACAC
```

Fig. 11
(Contiued)

```
GCTCCGCGACTCGGCCTCTCCACCCCCTCCCCAGCCTTTCTCTCGCCCTCTTCTCCCACA

CTCCCGGCCGGCGCCTCGGCTTTGTGCGAGGAGATGGTGTAGCCCCCTGGCCGCCGAAGA

GGAGCCGGACACTTGTCTCCCGTCTCCGAGCTGCTCCCCACCCCTGGAGGAGAGACCCCC

CCCTCGGCTCGGCGCCTTCTGCGTCTCCCGGCTGGTGGGGAAGCCTCTGCGCCGCCGGCA

CCATGAGTGAACAGAGTATCTGTCAGGCAAGAGCTGCTGTGATGGTTTATGATGATGCCA
  MetSerGluGlnSerIleCysGlnAlaArgAlaAlaValMetValTyrAspAspAlaAsn

ATAAGAAGTGGGTGCCAGCTGGTGGCTCAACTGGATTCAGCAGAGTTCATATCTATCACC
  LysLysTrpValProAlaGlyGlySerThrGlyPheSerArgValHisIleTyrHisHis

ATACAGGCAACAACACATTCAGAGTGGTGGGCAGGAAGATTCAGGACCATCAGGTCGTGA
  ThrGlyAsnAsnThrPheArgValValGlyArgLysIleGlnAspHisGlnValValIle

TAAACTGTGCCATTCCTAAAGGGTTGAAGTACAATCAAGCTACACAGACCTTCCACCAGT
  AsnCysAlaIleProLysGlyLeuLysTyrAsnGlnAlaThrGlnThrPheHisGlnTrp

GGCGAGATGCTAGACAGGTGTATGGTCTCAACTTTGGCAGCAAAGAGGATGCCAATGTCT
  ArgAspAlaArgGlnValTyrGlyLeuAsnPheGlySerLysGluAspAlaAsnValPhe

TCGCAAGTGCCATGATGCATGCCTTAGAAGTGTTAAATTCACAGGAAACAGGGCCAACAT
  AlaSerAlaMetMetHisAlaLeuGluValLeuAsnSerGlnGluThrGlyProThrLeu

TGCCTAGACAAAACTCACAACTACCTGCTCAAGTTCAAAATGGCCCATCCCAAGAAGAAT
  ProArgGlnAsnSerGlnLeuProAlaGlnValGlnAsnGlyProSerGlnGluGluLeu

TGGAAATTCAAAGAAGACAACTACAAGAACAGCAACGGCAAAAGGAGCTGGAGCGGGAAA
  GluIleGlnArgArgGlnLeuGlnGluGlnGlnArgGlnLysGluLeuGluArgGluArg

GGCTGAAGCGAGAAAGAATGGAAAGAGAAAGGAAGAAGAGAGAGAGGTTAGAAAGGGAAA
  LeuLysArgGluArgMetGluArgGluArgLysLysArgGluArgLeuGluArgGluArg

GGCTGGAGAGGGAGCGACTGGAACAAGAACAGCTGGAGAGAGAGAGACAAGAACGGGAAC
  LeuGluArgGluArgLeuGluGlnGluGlnLeuGluArgGluArgGlnGluArgGluArg

GGCAGGAACGCCTGGAGCGGCAGGAACGCCTGGAGCGGCAGGAACGCCTGGAGCGGCAGG
  GlnGluArgLeuGluArgGlnGluArgLeuGluArgGlnGluArgLeuGluArgGlnGlu

AACGCCTGGATCGGGAGAGGCAAGAAAGACAAGAACGAGAGAGGCTGGAGAGACTGGAAC
  ArgLeuAspArgGluArgGlnGluArgGlnGluArgGluArgLeuGluArgLeuGluArg

GGGAGAGGCAAGAAAGGGAGCGACAAGAGCAGTTAGAAAGGGAACAGCTGGAATGGGAGA
  GluArgGlnGluArgGluArgGlnGluGlnLeuGluArgGluGlnLeuGluTrpGluArg

GAGAGCGCAGAATATCAAGTGCTGCTGCCCCTGCCTCTGTTGAGACTCCTCTAAACTCTG
  GluArgArgIleSerSerAlaAlaAlaProAlaSerValGluThrProLeuAsnSerVal

TGCTGGGAGACTCTTCTGCTTCTGAGCCAGGCTTGCAGGCAGCCTCTCAGCCGGCCGAGA
  LeuGlyAspSerSerAlaSerGluProGlyLeuGlnAlaAlaSerGlnProAlaGluThr
```

Fig. 12

```
CTCCATCCCAACAGGAAGACAATCGCCCTTTAACTGGACTTGCAGCTGCAATTGCCGGAG
  ProSerGlnGlnGluAspAsnArgProLeuThrGlyLeuAlaAlaAlaIleAlaGlyAla

CAAAACTTAGGAAAGTGTCACGGATGGAGGATACCTCTTTCCCAAGTGGAGGGAATGCTA
  LysLeuArgLysValSerArgMetGluAspThrSerPheProSerGlyGlyAsnAlaIle

TTGGTGTGAACTCCGCCTCATCTAAAACAGATACAGGCCGTGGAAATGGACCCCTTCCTT
  GlyValAsnSerAlaSerSerLysThrAspThrGlyArgGlyAsnGlyProLeuProLeu

TAGGGGGTAGTGGTTTAATGGAAGAAATGAGTGCCCTGCTGGCCACGAGGAGAAGAATTG
  GlyGlySerGlyLeuMetGluGluMetSerAlaLeuLeuAlaThrArgArgArgIleAla

CTGAAAAGGGATCAACAATAGAAACAGAACAAAAAGAGGACAAAGGTGAAGATTCAGAGC
  GluLysGlySerThrIleGluThrGluGlnLysGluAspLysGlyGluAspSerGluPro

CTGTAACTTCTAAGGCCTCTTCAACAAGTACACCTGAACCAACAAGAAAACCTTGGGAAA
  ValThrSerLysAlaSerSerThrSerThrProGluProThrArgLysProTrpGluArg

GAACAAATACAATGAATGGCAGCAAGTCACCTGTTATCTCCAGACCAAAATCCACACCCT
  ThrAsnThrMetAsnGlySerLysSerProValIleSerArgProLysSerThrProLeu

TATCACAGCCCAGTGCCAATGGAGTCCAGACGGAAGGACTTGACTATGACAGGCTGAAGC
  SerGlnProSerAlaAsnGlyValGlnThrGluGlyLeuAspTyrAspArgLeuLysGln

AGGACATTTTAGATGAAATGAGAAAAGAATTAACAAAGCTAAAAGAAGAGCTCATTGATG
  AspIleLeuAspGluMetArgLysGluLeuThrLysLeuLysGluGluLeuIleAspAla

CAATCAGGCAGGAACTGAGCAAGTCAAATACTGCATAGAGGAACAGACTAAGGAGAGATA
  IleArgGlnGluLeuSerLysSerAsnThrAla

GGACTTTAATCTGGAGGAAAAATATCCTACAAACAACAACTGTTCACAACAGCAAACCCC

TACATTTATGAGCTGTAAGAAGAAAATGGAGACAAACAGAAGGAGGGAAAAACCAACCTA

CTCTGAAAGCCTTCAGACATTATGACTCTGGTGATAAGCTCTTTCCCTCTCCGTTTGCTG

CTTTTTTCTGGCCAACATCAGAATGGTAACAC
```

Fig. 12
(Continued)

```
GAATTCGAGCGCAGGAGCTCCGCTTCTCCACCTGCTCCCGGGGAGCTAGTGGGATCCAGA

GAATCACCCGCTGATGGTTTTTGCCCAGGCCTGAAACAACCAGAGAGCTACGGGAAAGGA

AGGGCTTGGCTTGCCAGAGGAATTTTCCAAGTGCTCAAACGCCAGGCTTACGGCGCCTGT

GATCCGTCCAGGAGGACAAAGTGGGATTTGAGGATCCACTCCACTTCTGCTCATGGCGCG
                                                          M  A  R

CCAGGGCCTGCCCCTGCACGTGGCCACACTGCTGACTGGGCTGCTGGAATGCCTGGGCTT
 Q  G  L  P  L  H  V  A  T  L  L  T  G  L  L  E  C  L  G  F

TGCTGGCGTCCTCTTTGGCTGGCCTTCACTAGTGTTTGTCTTCAAGAATGAAGATTACTT
 A  G  V  L  F  G  W  P  S  L  V  F  V  F  K  N  E  D  Y  F

TAAGGATCTGTGTGGACCAGATGCTGGGCCGATTGGCAATGCCACAGGGCAGGCTGACTG
 K  D  L  C  G  P  D  A  G  P  I  G  N  A  T  G  Q  A  D  C

CAAAGCCCAGGATGAGAGGTTCTCACTCATCTTCACCCTGGGGTCCTTCATGAACAACTT
 K  A  Q  D  E  R  F  S  L  I  F  T  L  G  S  F  M  N  N  F

CATGACATTCCCCACTGGCTACATCTTTGACCGGTTCAAGACCACCGTGGCACGCCTCAT
 M  T  F  P  T  G  Y  I  F  D  R  F  K  T  T  V  A  R  L  I

AGCCATATTTTTCTACACCACCGCCACACTCATCATAGCCTTCACCTCTGCAGCTTCTTT
 A  I  F  F  Y  T  T  A  T  L  I  I  A  F  T  S  A  A  S  L

ATGAAAAAGGCATCAGCCTCAGGGCCTCCTTCATCTTCATCTCTGTCTGCAAGTACCTGG

CATGTAGCACGCACTTTCCTCCTGATGCCCCGGGGGCACATCCCATACCCACTGCCCCCC

AACTACAGCTATGGCCTGTGCCCTGGGAATGGCACCACAAAGGAAGAGAAGGAAACAGCT

GAGCATGAAAACAGGGAGCTACAGTCAAAGGAGTTCCTTTCAGCGAA
```

Fig. 13

```
CTTTTTTCAGATAACATCTTCTGAGTCATAACCAGCCTGGGTCCCCCATGATCGTGGGGTCCCCTCGGGCCCTGACACAG
                                                    MetIleValGlySerProArgAlaLeuThrGln

CCCCTGGGTCTCCTTCGCCTGCTGCAGCTGGTGTCTACCTGCGTGGCCTTCTCGCTGGTGGCTAGCGTGGGCGCCTGGAC
ProLeuGlyLeuLeuArgLeuLeuGlnLeuValSerThrCysValAlaPheSerLeuValAlaSerValGlyAlaTrpTh

GGGGTCCATGGGCAACTGGTCCATGTTCACCTGGTGCTTCTGCTTCTCCGTGACCCTGATCATCCTCATCGTGGAGCTGT
rGlySerMetGlyAsnTrpSerMetPheThrTrpCysPheCysPheSerValThrLeuIleIleLeuIleValGluLeuC

GCGGGCTCCAGGCCCGCTTCCCCCTGTCTTGGCGCAACTTCCCCATCACCTTCGCCTGCTATGCGGCCCTCTTCTGCCTC
ysGlyLeuGlnAlaArgPheProLeuSerTrpArgAsnPheProIleThrPheAlaCysTyrAlaAlaLeuPheCysLeu

TCGGCCTCCATCATCTACCCCACCACCTATGTCCAGTTCCTGTCCCACGGCCGTTCGCGGGACCACGCCATCGCCGCCAC
SerAlaSerIleIleTyrProThrThrTyrValGlnPheLeuSerHisGlyArgSerArgAspHisAlaIleAlaAlaTh

CTTCTTCTCCTGCATCGCGTGTGTGGCTTACGCCACCGAAGTGGCCTGGACCCGGGCCCGGCCCGGCGAGATCACTGGCT
rPhePheSerCysIleAlaCysValAlaTyrAlaThrGluValAlaTrpThrArgAlaArgProGlyGluIleThrGlyT

ATATGGCCACCGTACCCGGGCTGCTGAAGGTGCTGGAGACCTTCGTTGCCTGCATCATCTTCGCGTTCATCAGCGACCCC
yrMetAlaThrValProGlyLeuLeuLysValLeuGluThrPheValAlaCysIleIlePheAlaPheIleSerAspPro

AACCTGTACCAGCACCAGCCGGCCCTGGAGTGGTGCGTGGCGGTGTACGCCATCTGCTTCATCCTAGCGGCCATCGCCAT
AsnLeuTyrGlnHisGlnProAlaLeuGluTrpCysValAlaValTyrAlaIleCysPheIleLeuAlaAlaIleAlaIl

CCTGCTGAACCTGGGGGAGTGCACCAACGTGCTACCCATCCCCTTCCCCAGCTTCCTGTCGGGGCTGGCCTTGCTGTCTG
eLeuLeuAsnLeuGlyGluCysThrAsnValLeuProIleProPheProSerPheLeuSerGlyLeuAlaLeuLeuSerV

TCCTCCTCTATGCCACCGCCCTTGTTCTCTGGCCCCTCTACCAGTTCGATGAGAAGTATGGCGGCCAGCCTCGGCGCTCG
alLeuLeuTyrAlaThrAlaLeuValLeuTrpProLeuTyrGlnPheAspGluLysTyrGlyGlyGlnProArgArgSer

AGAGATGTAAGCTGCAGCCGCAGCCATGCCTACTACGTGTGTGCCTGGGACCGCCGACTGGCTGTGGCCATCCTGACGGC
ArgAspValSerCysSerArgSerHisAlaTyrTyrValCysAlaTrpAspArgArgLeuAlaValAlaIleLeuThrAl

CATCAACCTACTGGCGTATGTGGCTGACCTGGTGCACTCTGCCCACCTGGTTTTTGTCAAGGTCTAAGACTCTCCCAAGA
aIleAsnLeuLeuAlaTyrValAlaAspLeuValHisSerAlaHisLeuValPheValLysVal

GGCTCCCGTTCCCTCTCCAACCTCTTTGTTCTTCTTGCCCGAGTTTTCTTTATGGAGTACTTCTTTCCTCCGCCTTTCCT

CTGTTTTCCTCTTCCTGTCTCCC
```

Fig. 14

```
1    GGATCCGGTTTCCCAGAAGATTCTGAGCCAATCAGTATTTCGCAT
     GlySerGlyPheProGluAspSerGluProIleSerIleSerHis

46   GGCAACTATACAAAACAGTATCCGGTGTTTGTGGGCCACAAGCCA
     GlyAsnTyrThrLysGlnTyrProValPheValGlyHisLysPro

91   GGACGGAACACCACACAGAGGCACAGGCTGGACATCCAGATGATT
     GlyArgAsnThrThrGlnArgHisArgLeuAspIleGlnMetIle

136  ATGATCATGAACGGAACCCTCTACATTGCTGCTAGGGACCATATT
     MetIleMetAsnGlyThrLeuTyrIleAlaAlaArgAspHisIle

181  TATACTGTTGATATAGACACATCACACACGGAAGAAATTTATTGT
     TyrThrValAspIleAspThrSerHisThrGluGluIleTyrCys

226  AGCAAAAAACTGACATGGAAATCTAGACAGGCCGATGTAGACACA
     SerLysLysLeuThrTrpLysSerArgGlnAlaAspValAspThr

271  TGCAGAATGAAGGGAAAACATAAGGATGAGTGCCACAACTTTATT
     CysArgMetLysGlyLysHisLysAspGluCysHisAsnPheIle

316  AAAGTTCTTCTAAAGAAAAACGATGATGCATTGTTTGTCTGTGGA
     LysValLeuLeuLysLysAsnAspAspAlaLeuPheValCysGly

361  ACTAATGCCTTCAACCCTTCCTGCAGAAACTATAAGATGGATACA
     ThrAsnAlaPheAsnProSerCysArgAsnTyrLysMetAspThr

406  TTGGAACCATTCGGGGATGAATTCAGCGGAATGGCCAGATGCCCA
     LeuGluProPheGlyAspGluPheSerGlyMetAlaArgCysPro

451  TATGATGCCAAACATGCCAACGTTGCACTGTTTGCAGATGGAAAA
     TyrAspAlaLysHisAlaAsnValAlaLeuPheAlaAspGlyLys

496  CTATACTCAGCCACAGTGACTGACTTCCTTGCCATTGACGCAGTC
     LeuTyrSerAlaThrValThrAspPheLeuAlaIleAspAlaVal

541  ATTTACCGGAGTCTTGGAGAAAGCCCTACCCTGCGGACCGTCAAG
     IleTyrArgSerLeuGlyGluSerProThrLeuArgThrValLys

586  CACGATTCAAAATGGTTGAAAGAACCATACTTTGTTCAAGCCGTG
     HisAspSerLysTrpLeuLysGluProTyrPheValGlnAlaVal

631  GATTACGGAGATTATATCTACTTCTTCTTCAGGGAAATAGCAGTG
     AspTyrGlyAspTyrIleTyrPhePhePheArgGluIleAlaVal

676  GAGTATAACACCATGGGAAAGGTAGTTTTCCCAAGAGTGGCTCAG
     GluTyrAsnThrMetGlyLysValValPheProArgValAlaGln

721  GTTTGTAAGAATGATATGGGAGGATCTCAAAGAGTCCTGGAGAAA
     ValCysLysAsnAspMetGlyGlySerGlnArgValLeuGluLys

766  CAGTGGACGTCGTTCCTGAAGGCGCGCTTGAACTGCTCAGTTCCT
     GlnTrpThrSerPheLeuLysAlaArgLeuAsnCysSerValPro
```

Fig. 15

```
811  GGAGACTCTCATTTTTATTTCAACATTCTCCAGGCAGTTACAGAT
     GlyAspSerHisPheTyrPheAsnIleLeuGlnAlaValThrAsp

856  GTGATTCGTATCAACGGGCGTGATGTTGTCCTGGCAACGTTTTCT
     ValIleArgIleAsnGlyArgAspValValLeuAlaThrPheSer

901  ACACCTTATAACAGCATCCCTGGGTCTGCAGTCTGTGCCTATGAC
     ThrProTyrAsnSerIleProGlySerAlaValCysAlaTyrAsp

946  ATGCTTGACATTGCCAGTGTTTTTACTGGGAGATTCAAGGAACAG
     MetLeuAspIleAlaSerValPheThrGlyArgPheLysGluGln

991  AAGTCTCCTGATTCCACCTGGACACCAGTTCCTGATGAACGAGTT
     LysSerProAspSerThrTrpThrProValProAspGluArgVal

1036 CCTAAGCCCAGGCCAGGTTGCTGTGCTGGCTCATCCTCCTTAGAA
     ProLysProArgProGlyCysCysAlaGlySerSerSerLeuGlu

1081 AGATATGCAACCTCCAATGAGTTCCCTGATGATACCCTGAACTTC
     ArgTyrAlaThrSerAsnGluPheProAspAspThrLeuAsnPhe

1126 ATCAAGACGCACCCGCTCATGGATGAGGCAGTGCCCTCCATCTTC
     IleLysThrHisProLeuMetAspGluAlaValProSerIlePhe

1171 AACAGGCCATGGTTCCTGAGAACAATGGTCAGATACCGCCTTACC
     AsnArgProTrpPheLeuArgThrMetValArgTyrArgLeuThr

1216 AAAATTGCAGTGGACACAGCTGCTGGGCCATATCAGAATCACACT
     LysIleAlaValAspThrAlaAlaGlyProTyrGlnAsnHisThr

1261 GTGGTTTTTCTGGGATCAGAGAAGGGAATCATCTTGAAGTTTTTG
     ValValPheLeuGlySerGluLysGlyIleIleLeuLysPheLeu

1306 GCCAGAATAGGAAATAGTGGTTTTCTAAATGACAGCCTTTTCCTG
     AlaArgIleGlyAsnSerGlyPheLeuAsnAspSerLeuPheLeu

1351 GAGGAGATGAGTGTTTACAACTCTGAAAAATGCAGCTATGATGGA
     GluGluMetSerValTyrAsnSerGluLysCysSerTyrAspGly

1396 GTCGAAGACAAAAGGATCATGGGCATGCAGCTGGACAGAGCAAGC
     ValGluAspLysArgIleMetGlyMetGlnLeuAspArgAlaSer

1441 AGCTCTCTGTATGTTGCGTTCTCTACCTGTGTGATAAAGGTTCCC
     SerSerLeuTyrValAlaPheSerThrCysValIleLysValPro

1486 CTTGGCCGGTGTGAACGACATGGGAAGTGTAAAAAAACCTGTATT
     LeuGlyArgCysGluArgHisGlyLysCysLysLysThrCysIle

1531 GCCTCCAGAGACCCATATTGTGGATGGATAAAGGAAGGTGGTGCC
     AlaSerArgAspProTyrCysGlyTrpIleLysGluGlyGlyAla

1576 TGCAGCCATTTATCACCCAACAGCAGACTGACTTTTGAGCAGGAC
     CysSerHisLeuSerProAsnSerArgLeuThrPheGluGlnAsp

1621 ATAGAGCGTGGCAATACAGATGGTCTGGGGGACTGTCACAATTCC
     IleGluArgGlyAsnThrAspGlyLeuGlyAspCysHisAsnSer
```

Fig. 15 Cont.

```
1666 TTTGTGGCACTGAATGGGCATTCCAGTTCCCTCTTGCCCAGCACA
     PheValAlaLeuAsnGlyHisSerSerSerLeuLeuProSerThr

1711 ACCACATCAGATTCGACGGCTCAAGAGGGGTATGAGTCTAGGGGA
     ThrThrSerAspSerThrAlaGlnGluGlyTyrGluSerArgGly

1756 GGAATGCTGGACTGGAAGCATCTGCTTGACTCACCTGACAGCACA
     GlyMetLeuAspTrpLysHisLeuLeuAspSerProAspSerThr

1801 GACCCTTTGGGGGCAGTGTCTTCCCATAATCACCAAGACAAGAAG
     AspProLeuGlyAlaValSerSerHisAsnHisGlnAspLysLys

1846 GGAGTGATTCGGGAAAGTTACCTCAAAGGCCACGACCAGCTCGAG
     GlyValIleArgGluSerTyrLeuLysGlyHisAspGlnLeuGlu
```

Fig. 15
(Continued)

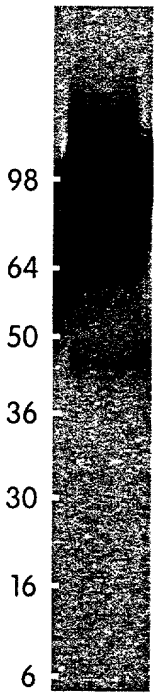

Fig. 16

GGATCC AACTGCCCCTCCGTCTGCTCGTGCAGTAACCAGTTCAG
CAAGGTGGTGTGCACGCGCCGGGGCCTCTCCGAGGTCCCGCAGGGTATTCCCTCGAACACCCGGTACCTCAACCTCATGG
AGAACAACATCCAGATGATCCAGGCCGACACCTTCCGCCACCTCCACCACCTGGAGGTCCTGCAGTTGGGCAGGAACTCC
ATCCGGCAGATTGAGGTGGGGGCCTTCAACGGCCTGGCCAGCCTCA**A**CACCCTGGAGCTGTTCGACAACTGGCTGACAGT
CATCCCTAGCGGGGCCTTTGAATACCTGTCCAAGCTGCGGGAGCTCTGGCTTCGCAACAACCCCATCGAAAGCATCCCCT
CTTACGTCTTCAACCGGGTGCCCTCCCTCATGCGCCTGGACTTGGGGGAGCTCAAGAAGCTGGAGTATATCTCTGAGGGA
GCTTTTGAGGGGCTGTTCAACCTCAAGTATCTGAACTTGGGCATGTGCAACATTAAAGACATGCCCAATCTCACCCCCCT
GGTGGGGCTGGAGGAGCTGGAGATGTCAGGGAACCACTTCCCTGAGATCAGGCCTGGCTCCTTCCATGGCCTGAGCTCCC
TCAAGAAGCTCTGGGTCATGAACTCACAGGTCAGCCTGATTGAGCGGAATGCTTTTGACGGGCTGGCTTCACTTGTGGAA
CTCAACTTGGCCCACAATAACCTCTCTTCTTTGCCCCATGACCTCTTTACCCCGCTGAGGTACCTGGTGGAGTTGCATCT
ACACCACAACCCTTGGAACTGTGATTGTGACATTCTGTGGCTAGCCTGGTGGCTTCGAGAGTATATACCCACCAATTCCA
CCTGCTGTGGCCGCTGTCATGCTCCCATGCACATGCGAGGCCGCTACCTCGTGGAGGTGGACCAGGCCTCCTTCCAGTGC
TCTGCCCCCTTCATCATGGACGCACCTCGAGACCTCAACATTTCTGAGGGTCGGATGGCAGAACTTAAGTGTCGGACTCC
CCCTATGTCCTCCGTGAAGTGGTTGCTGCCCAATGGGACAGTGCTCAGCCA**T**GCCTCCCGCCACCCAAGGATCTCTGTCC
TCAACGACGGCACCTTGAACTTTTCCCACGTGCTGCTTTCAGACACCGGGGTGTACACATGCATGG**T**GACCAATGTTGCA
GGCAACTCCAACGCCTCGGCCTACCTCAATG**T**GAGCACGGCTGAGCTTAACACCTCCAACTACAGCTTCTTCACCACAG**T**
AACAG**T**GGAGACCACGGAGATCTCGCCTGAGGACACAACGCGAAAGTACAAGCCTGTTCCTACCACGTCCACTGGTTACC
AGCCGGCATATACCACCTCTACCACG*GTCGAG*

Fig. 17A

NCPSVCSCSNQFSKVVCTRRGLSEVPQGIPSNTRYLNLMENNIQMIQADTFRHLHHLEVLQLGRNSIRQIEVGAFNG

LASLNTLELFD**N**WLTVIPSGAFEYLSKLRELWLRNNPIESIPSYAFNRVPSLMRLDLGELKKLEYISEGAFEGLFNL

KYLNLGMCNIKDMPNLTPLVGLEELEMSGNHFPEIRPGSFHGLSSLKKLWVMNSQVSLIERNAFDGLASLVELNLAH

NNLSSLPHDLFTPLRYLVELHLHHNPWNCDCDILWLAWWLREYIPTNSTCCGRCHAPMHMRGRYLVEVDQASFQCSA

PFIMDAPRDLNISEGRMAELKCRTPPMSSVKWLLPNGTVLSHASRHPRISVLNDGTLNFSHVLLSDTGVYTCM**V**TNV

AGNSNASAYLN**V**STAELNTSNYSFFTT**V**T**V**ETTEISPEDTTRKYKPVPTTSTGYQPAYTTSTT

Fig. 17B

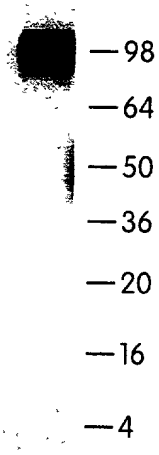

Fig. 18

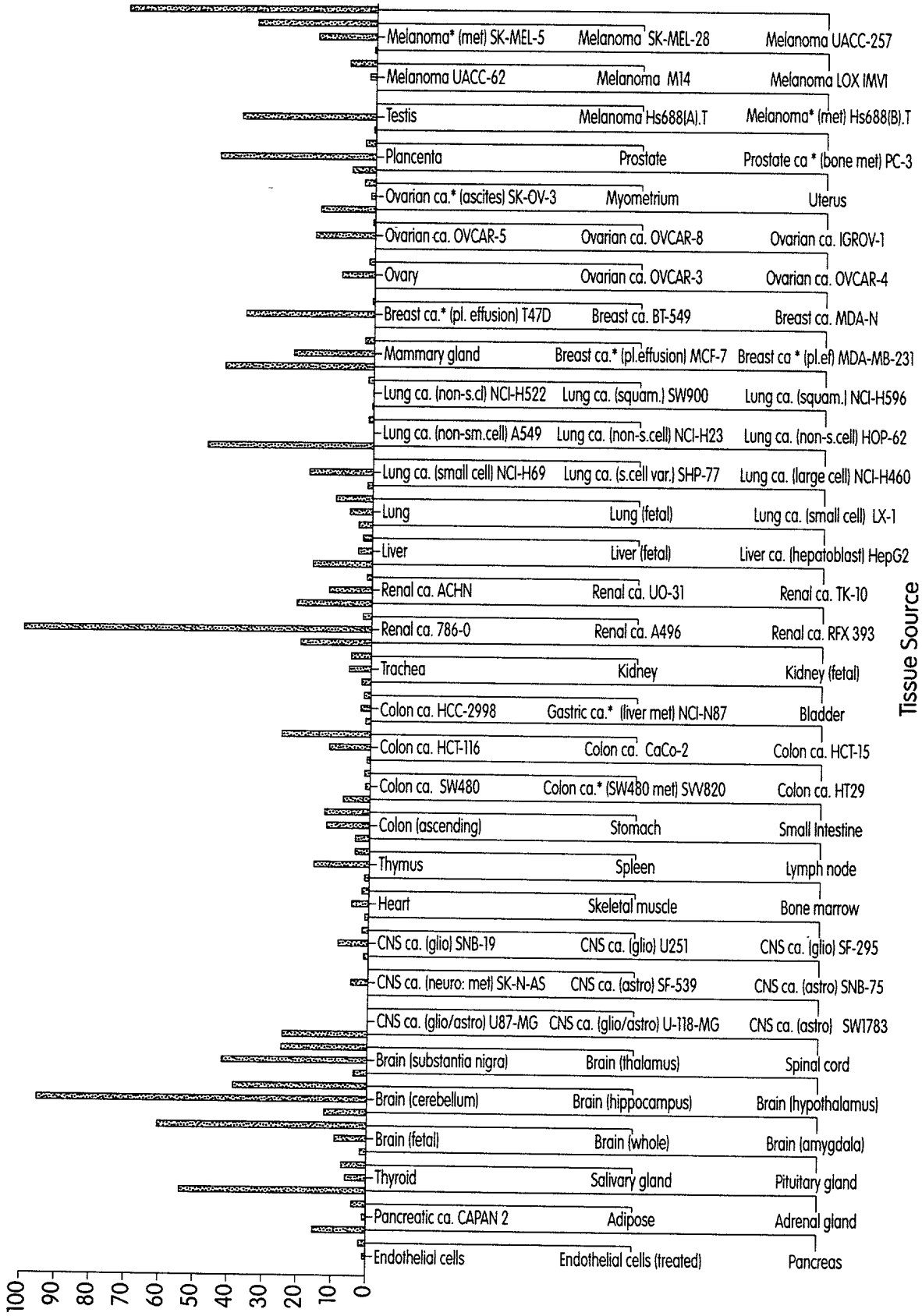
Melanoma* (met) SK-MEL-5
Melanoma SK-MEL-28
Melanoma UACC-257
Melanoma UACC-62
Melanoma M14
Melanoma LOX IMVI
Testis
Melanoma Hs688(A).T
Melanoma* (met) Hs688(B).T
Plancenta
Prostate
Prostate ca * (bone met) PC-3
Ovarian ca.* (ascites) SK-OV-3
Myometrium
Uterus
Ovarian ca. OVCAR-5
Ovarian ca. OVCAR-8
Ovarian ca. IGROV-1
Ovary
Ovarian ca. OVCAR-3
Ovarian ca. OVCAR-4
Breast ca.* (pl. effusion) T47D
Breast ca. BT-549
Breast ca. MDA-N
Mammary gland
Breast ca.* (pl.effusion) MCF-7
Breast ca * (pl.ef) MDA-MB-231
Lung ca. (non-s.cl) NCI-H522
Lung ca. (squam.) SW900
Lung ca. (squam.) NCI-H596
Lung ca. (non-sm.cell) A549
Lung ca. (non-s.cell) NCI-H23
Lung ca. (non-s.cell) HOP-62
Lung ca. (small cell) NCI-H69
Lung ca. (s.cell var.) SHP-77
Lung ca. (large cell) NCI-H460
Lung
Lung (fetal)
Lung ca. (small cell) LX-1
Liver
Liver (fetal)
Liver ca. (hepatoblast) HepG2
Renal ca. ACHN
Renal ca. UO-31
Renal ca. TK-10
Renal ca. 786-0
Renal ca. A496
Renal ca. RFX 393
Trachea
Kidney
Kidney (fetal)
Colon ca. HCC-2998
Gastric ca.* (liver met) NCI-N87
Bladder
Colon ca. HCT-116
Colon ca. CaCo-2
Colon ca. HCT-15
Colon ca. SW480
Colon ca.* (SW480 met) SW620
Colon ca. HT29
Colon (ascending)
Stomach
Small Intestine
Thymus
Spleen
Lymph node
Heart
Skeletal muscle
Bone marrow
CNS ca. (glio) SNB-19
CNS ca. (glio) U251
CNS ca. (glio) SF-295
CNS ca. (neuro: met) SK-N-AS
CNS ca. (astro) SF-539
CNS ca. (astro) SNB-75
CNS ca. (glio/astro) U87-MG
CNS ca. (glio/astro) U-118-MG
CNS ca. (astro) SW1783
Brain (substantia nigra)
Brain (thalamus)
Spinal cord
Brain (cerebellum)
Brain (hippocampus)
Brain (hypothalamus)
Brain (fetal)
Brain (whole)
Brain (amygdala)
Thyroid
Salivary gland
Pituitary gland
Pancreatic ca. CAPAN 2
Adipose
Adrenal gland
Endothelial cells
Endothelial cells (treated)
Pancreas
Tissue Source
100
90
80
70
60
50
40
30
20
10
0
Relative Expression

Fig. 19A

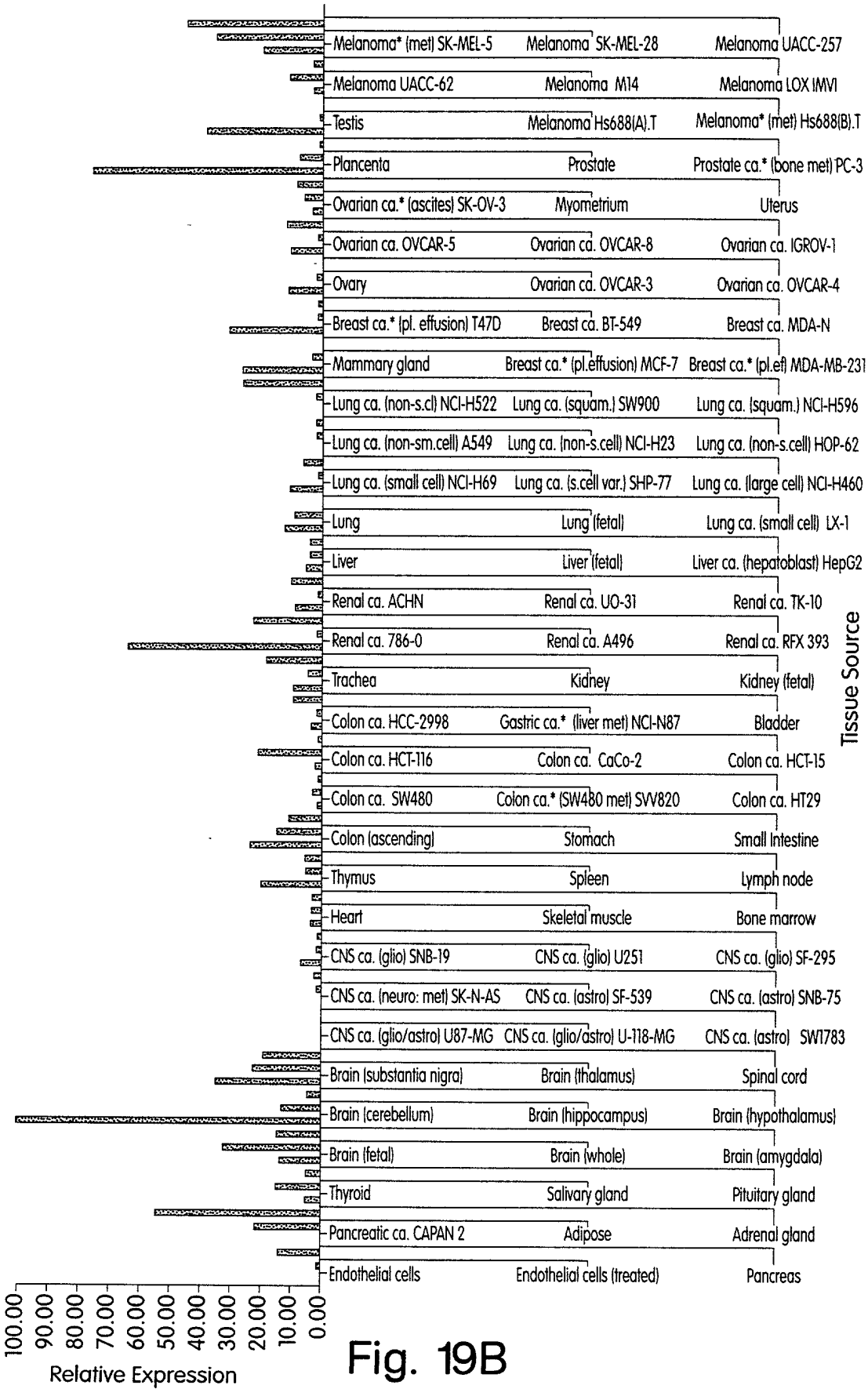
Melanoma* (met) SK-MEL-5
Melanoma SK-MEL-28
Melanoma UACC-257
Melanoma UACC-62
Melanoma M14
Melanoma LOX IMVI
Testis
Melanoma Hs688(A).T
Melanoma* (met) Hs688(B).T
Plancenta
Prostate
Prostate ca.* (bone met) PC-3
Ovarian ca.* (ascites) SK-OV-3
Myometrium
Uterus
Ovarian ca. OVCAR-5
Ovarian ca. OVCAR-8
Ovarian ca. IGROV-1
Ovary
Ovarian ca. OVCAR-3
Ovarian ca. OVCAR-4
Breast ca.* (pl. effusion) T47D
Breast ca. BT-549
Breast ca. MDA-N
Mammary gland
Breast ca.* (pl.effusion) MCF-7
Breast ca.* (pl.ef) MDA-MB-231
Lung ca. (non-s.cl) NCI-H522
Lung ca. (squam.) SW900
Lung ca. (squam.) NCI-H596
Lung ca. (non-sm.cell) A549
Lung ca. (non-s.cell) NCI-H23
Lung ca. (non-s.cell) HOP-62
Lung ca. (small cell) NCI-H69
Lung ca. (s.cell var.) SHP-77
Lung ca. (large cell) NCI-H460
Lung
Lung (fetal)
Lung ca. (small cell) LX-1
Liver
Liver (fetal)
Liver ca. (hepatoblast) HepG2
Renal ca. ACHN
Renal ca. UO-31
Renal ca. TK-10
Renal ca. 786-0
Renal ca. A496
Renal ca. RFX 393
Trachea
Kidney
Kidney (fetal)
Colon ca. HCC-2998
Gastric ca.* (liver met) NCI-N87
Bladder
Colon ca. HCT-116
Colon ca. CaCo-2
Colon ca. HCT-15
Colon ca. SW480
Colon ca.* (SW480 met) SW620
Colon ca. HT29
Colon (ascending)
Stomach
Small Intestine
Thymus
Spleen
Lymph node
Heart
Skeletal muscle
Bone marrow
CNS ca. (glio) SNB-19
CNS ca. (glio) U251
CNS ca. (glio) SF-295
CNS ca. (neuro: met) SK-N-AS
CNS ca. (astro) SF-539
CNS ca. (astro) SNB-75
CNS ca. (glio/astro) U87-MG
CNS ca. (glio/astro) U-118-MG
CNS ca. (astro) SW1783
Brain (substantia nigra)
Brain (thalamus)
Spinal cord
Brain (cerebellum)
Brain (hippocampus)
Brain (hypothalamus)
Brain (fetal)
Brain (whole)
Brain (amygdala)
Thyroid
Salivary gland
Pituitary gland
Pancreatic ca. CAPAN 2
Adipose
Adrenal gland
Endothelial cells
Endothelial cells (treated)
Pancreas
Tissue Source
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Relative Expression

Fig. 19B

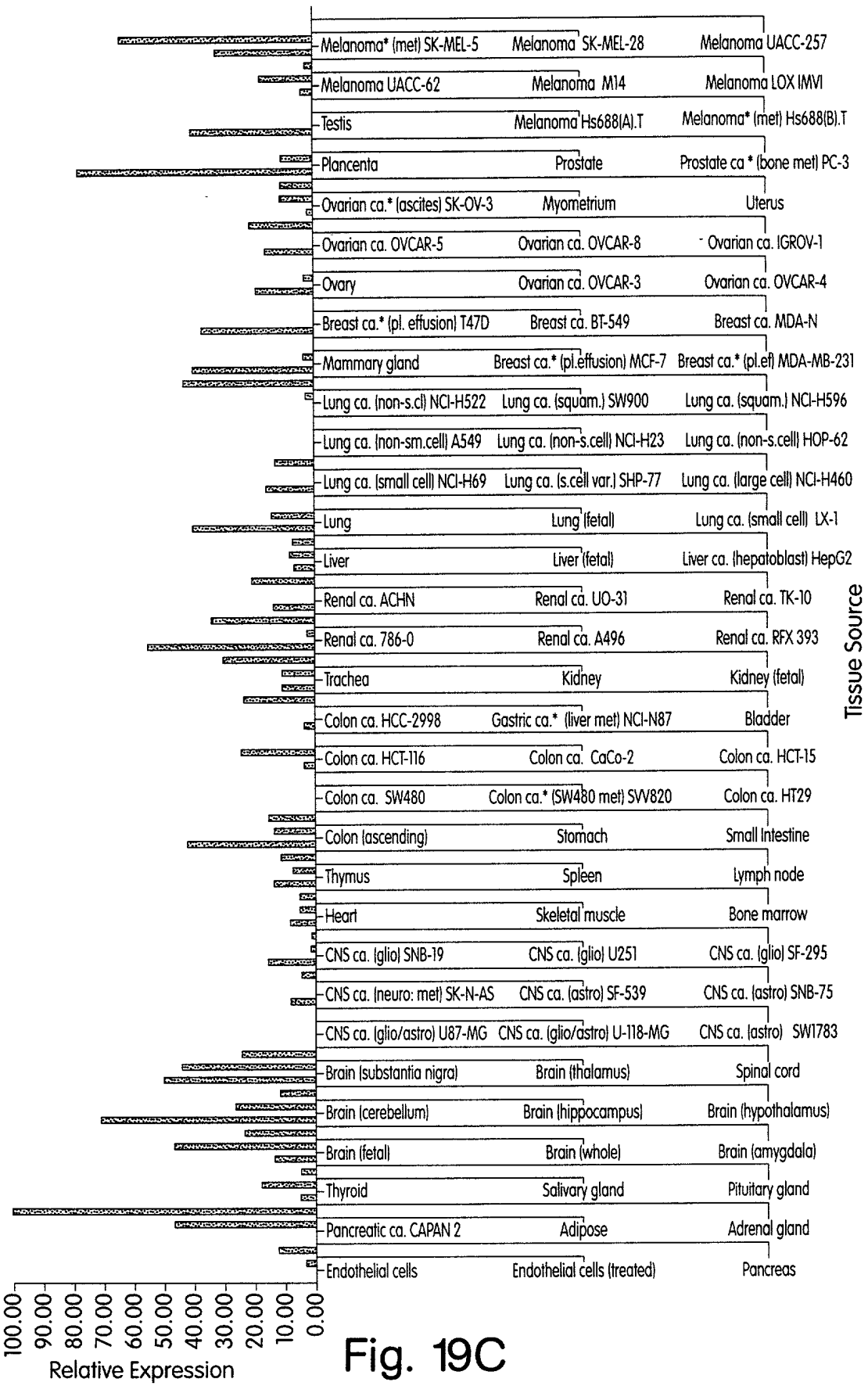
Melanoma* (met) SK-MEL-5
Melanoma SK-MEL-28
Melanoma UACC-257
Melanoma UACC-62
Melanoma M14
Melanoma LOX IMVI
Testis
Melanoma Hs688(A).T
Melanoma* (met) Hs688(B).T
Plancenta
Prostate
Prostate ca * (bone met) PC-3
Ovarian ca.* (ascites) SK-OV-3
Myometrium
Uterus
Ovarian ca. OVCAR-5
Ovarian ca. OVCAR-8
Ovarian ca. IGROV-1
Ovary
Ovarian ca. OVCAR-3
Ovarian ca. OVCAR-4
Breast ca.* (pl. effusion) T47D
Breast ca. BT-549
Breast ca. MDA-N
Mammary gland
Breast ca.* (pl.effusion) MCF-7
Breast ca.* (pl.ef) MDA-MB-231
Lung ca. (non-s.cl) NCI-H522
Lung ca. (squam.) SW900
Lung ca. (squam.) NCI-H596
Lung ca. (non-sm.cell) A549
Lung ca. (non-s.cell) NCI-H23
Lung ca. (non-s.cell) HOP-62
Lung ca. (small cell) NCI-H69
Lung ca. (s.cell var.) SHP-77
Lung ca. (large cell) NCI-H460
Lung
Lung (fetal)
Lung ca. (small cell) LX-1
Liver
Liver (fetal)
Liver ca. (hepatoblast) HepG2
Renal ca. ACHN
Renal ca. UO-31
Renal ca. TK-10
Renal ca. 786-0
Renal ca. A496
Renal ca. RFX 393
Trachea
Kidney
Kidney (fetal)
Colon ca. HCC-2998
Gastric ca.* (liver met) NCI-N87
Bladder
Colon ca. HCT-116
Colon ca. CaCo-2
Colon ca. HCT-15
Colon ca. SW480
Colon ca.* (SW480 met) SW620
Colon ca. HT29
Colon (ascending)
Stomach
Small Intestine
Thymus
Spleen
Lymph node
Heart
Skeletal muscle
Bone marrow
CNS ca. (glio) SNB-19
CNS ca. (glio) U251
CNS ca. (glio) SF-295
CNS ca. (neuro: met) SK-N-AS
CNS ca. (astro) SF-539
CNS ca. (astro) SNB-75
CNS ca. (glio/astro) U87-MG
CNS ca. (glio/astro) U-118-MG
CNS ca. (astro) SW1783
Brain (substantia nigra)
Brain (thalamus)
Spinal cord
Brain (cerebellum)
Brain (hippocampus)
Brain (hypothalamus)
Brain (fetal)
Brain (whole)
Brain (amygdala)
Thyroid
Salivary gland
Pituitary gland
Pancreatic ca. CAPAN 2
Adipose
Adrenal gland
Endothelial cells
Endothelial cells (treated)
Pancreas
Tissue Source
100.00
90.00
80.00
70.00
60.00
50.00
40.00
30.00
20.00
10.00
0.00
Relative Expression

Fig. 19C

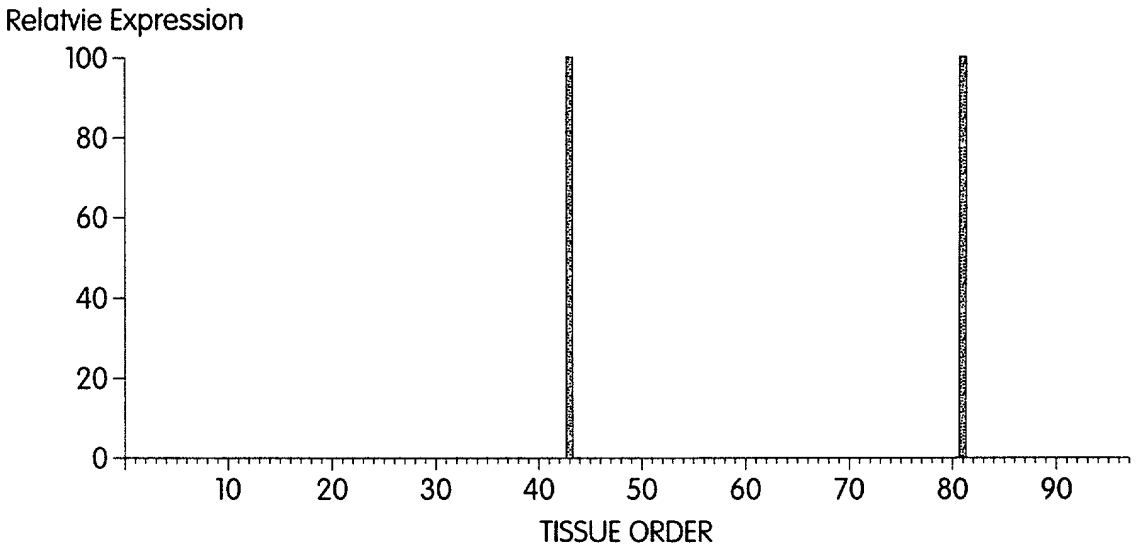
Relatvie Expression
100
80
60
40
20
0
10
20
30
40
50
60
70
80
90
TISSUE ORDER

Fig. 20

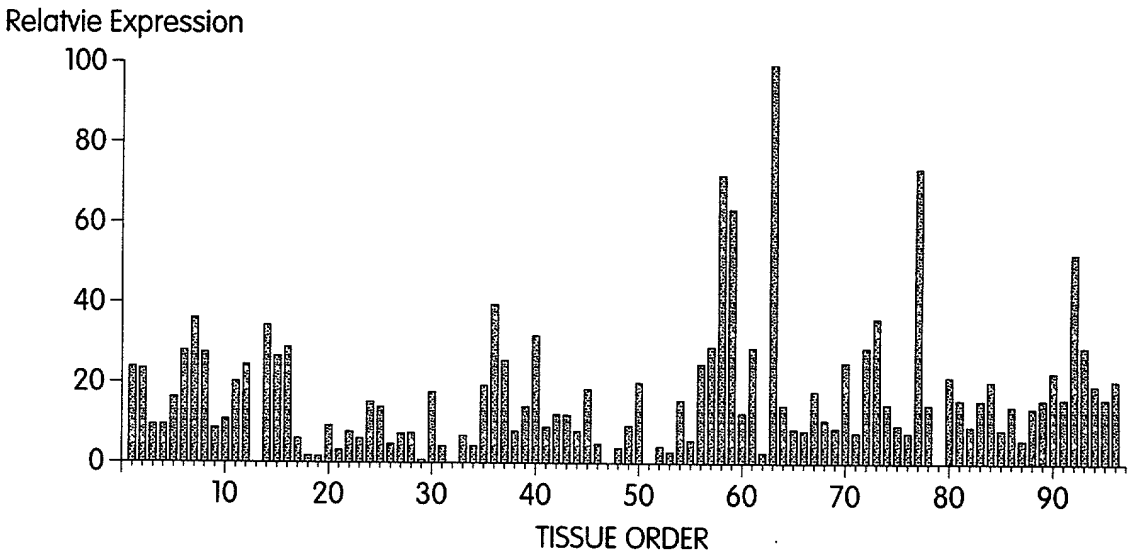
Relatvie Expression
100
80
60
40
20
0
10
20
30
40
50
60
70
80
90
TISSUE ORDER

Fig. 21

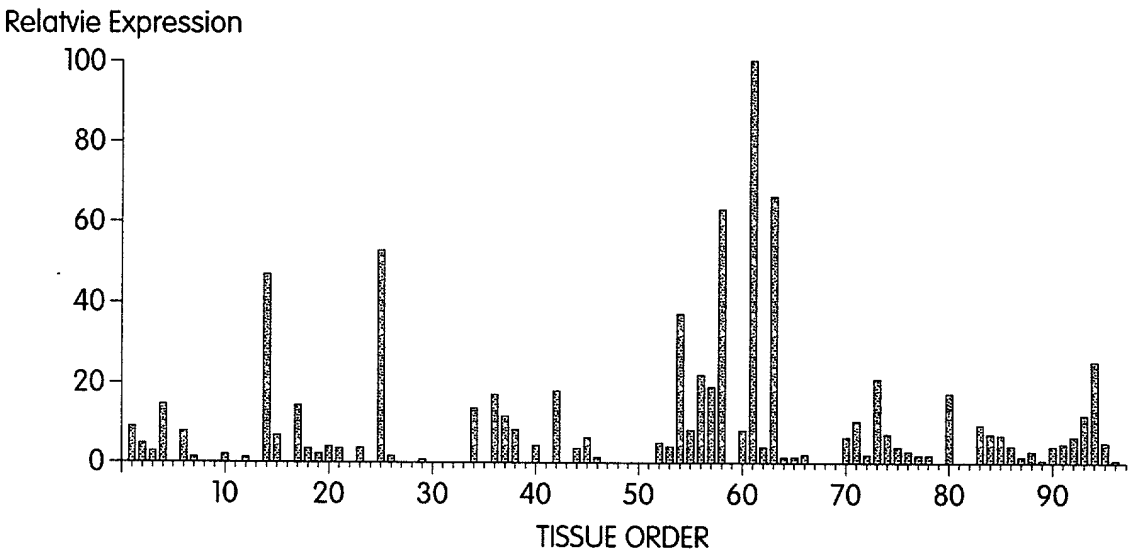
Relatvie Expression
100
80
60
40
20
0
10
20
30
40
50
60
70
80
90
TISSUE ORDER

Fig. 22

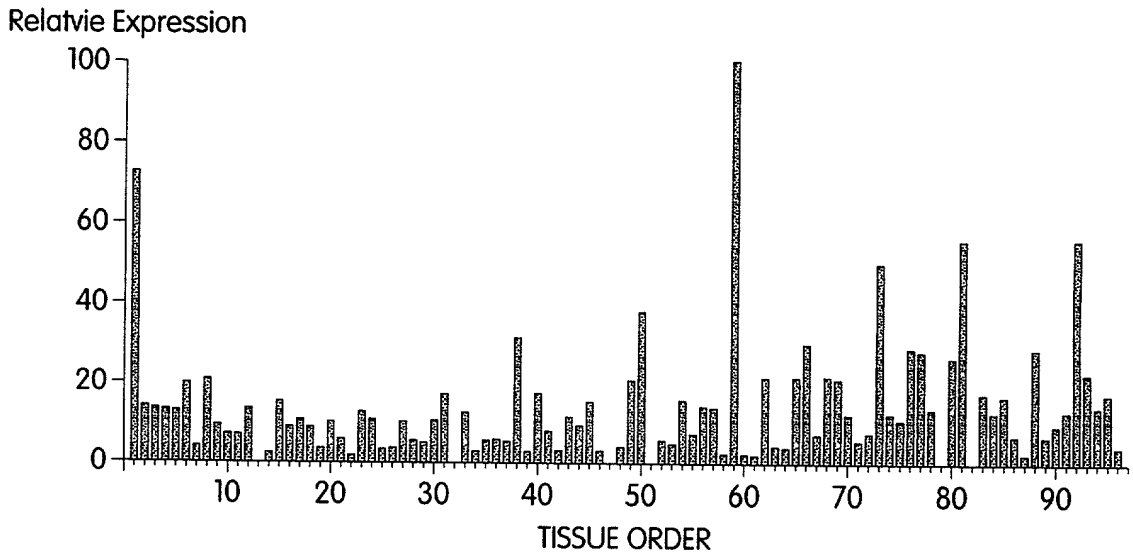
Relatvie Expression
100
80
60
40
20
0
10
20
30
40
50
60
70
80
90
TISSUE ORDER

Fig. 23